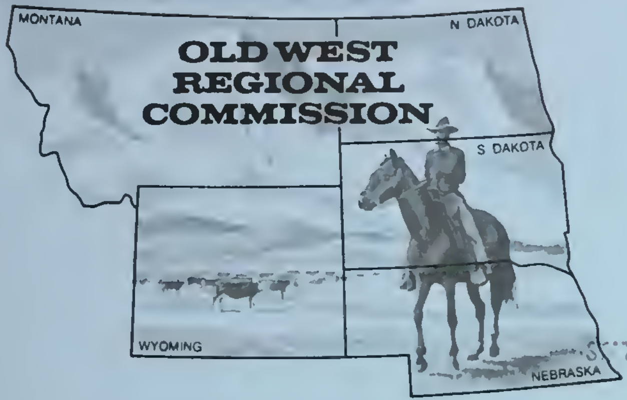
S Energy Research
333.805 Information System
07eris quarterly report
V.2, No.2



ENERGY RESEARCH INFORMATION SYSTEM

Projects Report

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Vol. 2, No. 2
April 1977

Project Nos. 00000717 through 00000891

A Program of:

The Old West Regional Commission
Billings, Montana

in cooperation with

ureau of Land Management,

EMRIA Program

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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ENERGY RESEARCH INFORMATION SYSTEM

PROJECTS REPORT

Vol. 2, No. 2

Old West Regional Commission
and
USDI, Bureau of Land Management, EMRIA

Billings, Montana
April, 1977

PREPARED BY

Compilers: Cathy Boyd and Beth Givens
Data Input: Laura Schillinger
Old West Regional Commission
Hedden-Empire Bldg., Suite 228
Billings, Montana 59101

IN COOPERATION WITH

U.S. Bureau of Land Management, EMRIA Program

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INTRODUCTION

The Energy Research Information System (ERIS) is a service administered by the Old West Regional Commission in response to the need for current information on research activities in the Region's rapidly growing and changing field of energy. Cooperating with the Commission on ERIS is the U.S. Bureau of Land Management, EMRIA program (Energy Minerals Rehabilitation Inventory and Analysis).

The purpose of ERIS is to compile and make available to the energy research users of the Region an up-to-date inventory of ongoing and recently completed energy-related research projects. By providing researchers with a means of communication with other researchers and allowing government and policy decision-makers access to Regional energy research, ERIS aims to improve communication channels among energy research users. Use of the system can be an aid in conducting research assessments, avoiding duplication, and pinpointing areas of additional research need.

ERIS Scope

The term "energy-related" covers a broad spectrum of activities and encompasses a large volume of research. Nonetheless, ERIS attempts to report energy-related research projects in as comprehensive a manner as possible. This includes reclamation, energy conversion, and land use research, socioeconomic impact and alternate energy resource studies, as well as programs related to energy development which do not necessarily involve research. The geographic focus of ERIS is upon research conducted in the Old West Region states - Montana, Nebraska, North Dakota, South Dakota and Wyoming.

The compilation of energy research projects in the ERIS reports has been accomplished by combining ERIS's own information-gathering efforts with those of other clearinghouses - most notably, Oak Ridge National Laboratory's *Inventory of Current Energy Research and Development,* the Smithsonian Science Information Exchange, the Montana Energy Resources and Policy Office, North Dakota Regional Environmental Assessment Program, and the other various energy agencies of the states of the Old West Region.

Use of the Energy Research Information System

ERIS Reports

ERIS information is stored in a computerized data base. As the data base grows, periodic reports are printed which list the latest contents of the data base. The first such report was issued in November, 1975.

Access to ERIS information is available through subject-oriented chapters and through the indexes located at the end of the reports. These indexes are: Location, Personal Name, Organization, and Subject. Instructions for the use of the indexes precede each section. The indexes are cumulated annually.

The diagram on the following page further describes how ERIS is organized.

Computer Search Service

The holdings of ERIS are computerized, allowing for flexibility in conducting special searches of the data base. The computer search service is offered as a complement to the ERIS reports. If your inquiry concerning energy research cannot be answered by manual use of the reports, contact a member of the ERIS staff and request that a special search be conducted.

Please direct your inquiries to: ERIS, Old West Regional Commission, 228 Hedden-Empire Bldg., Billings, Mt 59101. 406-657-6665 (commercial) or 585-6665 (FTS).

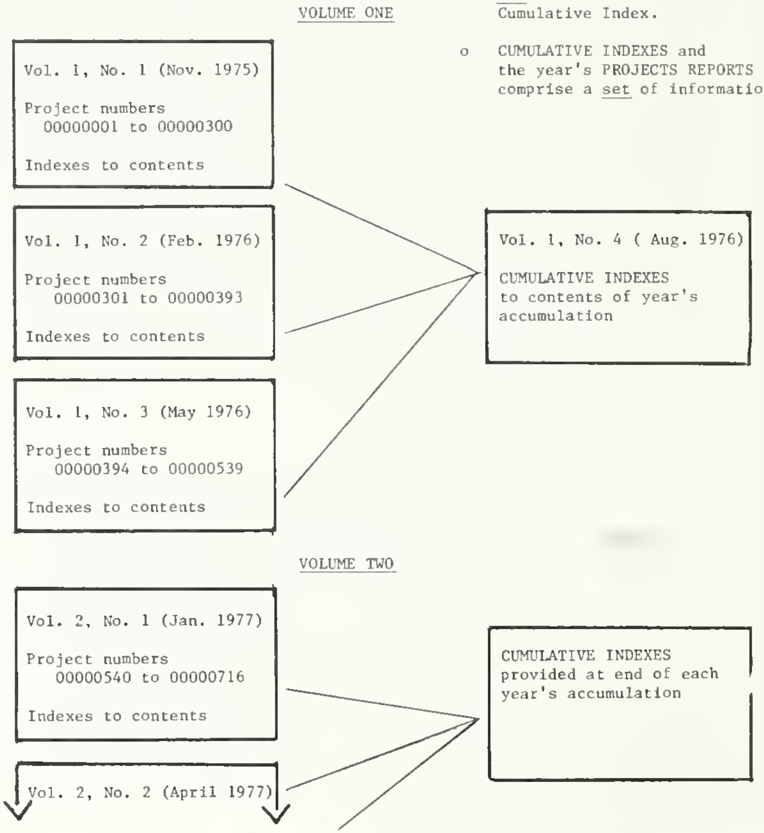
* * * * * * * * *

The Old West Regional Commission is a Federal-State partnership designed to address regional economic problems and stimulate orderly economic growth in the states of Montana, Nebraska, North Dakota, South Dakota and Wyoming. Established in 1972 under the Public Works and Economic Development Act of 1965, it is one of eight such commissions in the United States.

The EMRIA program is administered by the U.S. Bureau of Land Management under the Department of the Interior. The purpose of EMRIA is to determine the reclamation potential for lands disturbed by removal of energy minerals and the post-mining effects on surface and groundwater within the basin of disturbance. Chemical and physical data are collected through EMRIA studies in cooperation with the Bureau of Reclamation, Geological Survey, Soil Conservation Service, state agencies, and from coordination with private companies.

HOW ERIS IS ORGANIZED

- PROJECTS REPORTS (formerly called Quarterly Reports) contain descriptions of energy research in the Old West Region.
- Each REPORT is indexed according to Location, Name, Organization, and Subject.
- CUMULATIVE INDEXES are provided once a year to incorporate previous indexes of the year's PROJECTS REPORTS under one cover.
- Project descriptions are not included with the Cumulative Index.
- CUMULATIVE INDEXES and the year's PROJECTS REPORTS comprise a set of information.


VOLUME ONE
Vol. 1, No. 1 (Nov. 1975)
Project numbers 00000001 to 00000300
Indexes to contents
Vol. 1, No. 2 (Feb. 1976)
Project numbers 00000301 to 00000393
Indexes to contents
Vol. 1, No. 3 (May 1976)
Project numbers 00000394 to 00000539
Indexes to contents
Vol. 1, No. 4 (Aug. 1976)
CUMULATIVE INDEXES to contents of year's accumulation
VOLUME TWO
Vol. 2, No. 1 (Jan. 1977)
Project numbers 00000540 to 00000716
Indexes to contents
Vol. 2, No. 2 (April 1977)
CUMULATIVE INDEXES provided at end of each year's accumulation

REPORTING FORM
ENERGY RESEARCH INFORMATION SYSTEM
Old West Regional Commission

INSTRUCTIONS: Please complete the relevant categories of the Reporting Form for each energy-related project currently being conducted or recently completed by your organization in the States of the Old West Region. If an umbrella project covers several separate studies, fill out a form for each one, as well as for the umbrella project. If you want any of the information you provide to be omitted from ERIS publications, make a note of this in Category 17, "Special Instructions for Proprietary Information."

In order to assist us in assigning keywords for computer access to your research information, we ask that you circle the most descriptive words and phrases of the Title and Abstract. If necessary, add additional terms of your own choosing.

If you are amending previously submitted information, please note this on the Reporting Form.

PLEASE RETURN COMPLETED REPORTING FORM(S) TO: ERIS, OLD WEST REGIONAL COMMISSION, 228 HEDDEN-EMPIRE BLDG., BILLINGS, MT 59101. PHONE: (406) 657-6665 (Commercial) or 585-6665 (FTS).

1. Date prepared ______________ Respondent ______________

   Check one: ______ Original Information ______ Amendment to ERIS Project No. ______

2. **PROJECT/PROGRAM TITLE** (circle keywords) ______________

   ____

   ____

3. **PROJECT NUMBER** (descriptive no. used by your organization) ______________

4. **PRINCIPAL INVESTIGATOR** (include organization name and address if different from 5 below)

   INVESTIGATOR ______________ PHONE NO. ______________

   ORGANIZATION ______________

   ADDRESS ______________

   ____

   OTHER INVESTIGATORS:

   ____

   ____

5. **RESEARCH INSTITUTION** (institution/organization where or through which research is performed)

   ORGANIZATION ______________ PHONE NO. ______________

   ADDRESS ______________

   ____

6. OTHER COORDINATING AND COOPERATING ORGANIZATIONS

COORDINATOR (organization whose function is to coordinate research of other entities by subcontracting and/or supervising said research; does not provide primary source funding and may or may not conduct the research itself)

ORGANIZATION ____________________

PROJECT MONITOR ____________________ PHONE NO. __________

ADDRESS ____________________

____

COOPERATOR(S) (organization(s) which provides time and/or resources toward the project but does not conduct, supervise, or fund the research)
Provide organization name(s) below:

7. PRIMARY SPONSOR (organization which provides funds)

ORGANIZATION ____________________

PROJECT MONITOR ____________________ PHONE NO. __________

ADDRESS ____________________

____

8. OTHER SPONSORS (provide organization name(s) below)

____

____

____

9-10. FUNDING AMOUNTS

Type of accounting period: ______ Calendar year ______ Fiscal Year
Enter the **TOTALS** from each sponsor in the appropriate blanks. If the breakdown is known, enter the yearly amounts in the appropriate blanks.

Organizations from 7 and 8 above	197__	197__	197__	Total
(Primary) ______	$ ______	$ ______	$ ______	$ ______
(Other) ______	$ ______	$ ______	$ ______	$ ______
______	$ ______	$ ______	$ ______	$ ______
______	$ ______	$ ______	$ ______	$ ______
		Total Funding		$ ______

11. **TIME FRAME:** Starting Date ______________ Ending Date ______________
mo. day yr. mo. day yr.

12. **ACTUAL COMPLETION DATE** (leave blank if not completed) ______________
mo. day yr.

13. **LOCATION:** States and Counties; if appropriate, Region, River Basin, Cities, Township/Range/Section, etc.

STATES AND COUNTIES ______________

OTHER LOCATION INFORMATION ______________

14. **ABSTRACT:** Problem, Objectives, and Approach (in free form, 100-200 words; please be brief; computer space is restricted)
PLEASE CIRCLE KEYWORDS AND PHRASES. Add other descriptors if necessary.

15. **REPORTS AND PUBLICATIONS** (title, authors, report number, date, issuing agency)

16. **AVAILABILITY OF REPORTS AND PUBLICATIONS** (indicate organization and mailing address where reports can be obtained; also indicate cost and order number if appropriate)

17. **SPECIAL INSTRUCTIONS FOR PROPRIETARY INFORMATION** (enter category number and information which you desire to be omitted from published material)

18. A. **TYPE OF STUDY OR PROGRAM**
(check all that apply)

1) ☐ Basic research

2) ☐ Applied research

3) ☐ Demonstration project or program not involving research (eg, a community technical assistance program)

4) ☐ Environmental Impact Statement

5) ☐ Other ______________________

B. **TYPE OF DATA COLLECTED**
(check all that apply)

1) ☐ Primary data sources

- a. ☐ Field study
- b. ☐ Lab. study
- c. ☐ Both of the above

2) ☐ Secondary data sources

3) ☐ Both 1 and 2 above

C. **PROJECT AFFILIATION** (check one of the following)

1) ☐ The study described on this Reporting Form is an umbrella project or program. It encompasses two (2) or more separate studies which are subcontracted and/or of differing subject content. Please provide Reporting Forms for the separate projects or incorporate them onto this Reporting Form.

2) ☐ The study described on this Reporting Form is a part of an umbrella project or program. Please provide umbrella project name and overall coordinating organization below.

____

____

3) ☐ The study is a separate project or program in and of itself.

THANK YOU FOR COMPLETING THIS REPORTING FORM.

r. 8/76

ENERGY RESEARCH INFORMATION SYSTEM

1.1 GENERAL

00000717

PROJECT TITLE

MONTANA STATEWIDE SITING STUDY

INVESTIGATORS

SHARON SOLOMON / GAIL KUNTZ

RESEARCH INSTITUTION

MONTANA ENERGY ADVISORY COUNCIL
POWER BLOCK / HELENA, MT 59601

PRIMARY SPONSOR

MONTANA ENERGY ADVISORY COUNCIL

PRIMARY FUNDING AMOUNT

5,500

TIME FRAME

AUG. 1975 TO DEC. 1976

LOCATION

MT

ABSTRACT

THE PROJECT WAS INITIATED BY THE MONTANA ENERGY ADVISORY COUNCIL IN PARTIAL RESPONSE TO THE DIRECTIVE OF THE 1975 LEGISLATURE THAT 'THE SITING OF CERTAIN ENERGY CONVERSION FACILITIES SMALL BE SUSPENDED... UNTIL A LONG-TERM COMPREHENSIVE STATE ENERGY CONVERSION POLICY AND PLAN' HAS BEEN PREPARED. THE LEGISLATURE SPECIFICALLY CALLED FOR A 'STATEWIDE SITING INVENTORY AND A PROPOSED SITING POLICY FOR THE COORDINATED SITING OF ENERGY CONVERSION FACILITIES TO MEET MONTANA'S ENERGY NEEDS.' THE MAJOR COMPONENTS OF THIS STUDY ARE: 1. AN ANALYSIS AND COMMENT ON THE STRENGTHS AND WEAKNESS OF THE MONTANA SITING PROCESS; 2. THE INVESTIGATION OF ALTERNATIVE OPTIONS OPEN TO THE STATE IN DEVELOPING A STATEWIDE SITING POLICY AND INVENTORY; 3. A SURVEY OF THE SITING PROCESSES EMPLOYED IN SIX OTHER STATES; 4. CONSIDERATIONS INCLUDED IN THE DEVELOPMENT OF CRITERIA TO GUIDE THE SITING INVENTORY EFFORT; 5. THE AVAILABILITY OF AUTOMATED SYSTEMS TO FACILITATE THE STORAGE AND ANALYSIS OF DATA; 6. RECOMMENDATIONS OF SPECIFIC PROPOSALS DESIGNED TO MEET THE POLICY AND PLANNING NEEDS IDENTIFIED IN THE PRECEDING SECTIONS.(MEAC)

STUDY AFFILIATION

PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL

*****

00000718

PROJECT TITLE

GEOLOGY OF CLARK BUTTE QUADRNAGLES, NORTH DAKOTA

PROJECT NUMBER

9C15-64

INVESTIGATORS

G. D. MOWAT

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BILLINGS, MT 59101

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

ND

ABSTRACT

ONE COAL SERIES MAP WILL BE SUBMITTED FOR PUBLICATION. THREE OTHER COAL SERIES MAPS WILL BE REVISED AND ONE OF THESE WILL BE SUBMITTED FOR REVIEW.

*****

00000719

PROJECT TITLE

DEVELOPMENT AND PROJECTS WORK GROUP - WEST CENTRAL ND REGIONAL EIS

INVESTIGATORS

ROBERT D. KAISER / WEST CENTRAL ND REGIONAL EIS /
1200 MISSOURI AVE. SUITE 102 / BISMARCK, ND 58501

RESEARCH INSTITUTION

U.S. BUREAU OF LAND MANAGEMENT / 222 ND 32ND ST /
BILLINGS, MT 59107

PRIMARY SPONSOR

U.S. BUREAU OF LAND MANAGEMENT

SECONDARY SPONSOR(S)

OLD WEST REGIONAL COMMISSION

PRIMARY FUNDING AMOUNT

600,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)

SECONDARY FUNDING AMOUNT(S)

192,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)

TIME FRAME

MAY 1976 TO MAR. 1978

LOCATION

ND - BURLEIGH, DUNN, MCLEAN, MERCER, MORTON, OLIVER, STARK COS.

ABSTRACT

THE REGIONAL EIS IS AN ASSESSMENT OF PENDING COAL AND ENERGY DEVELOPMENT IN WEST-CENTRAL NORTH DAKOTA. THE DEVELOPMENT AND PROJECTS WORK GROUP PREPARED THE PROPOSED ACTION OF CHAPTER ONE SECTION OF THE EIS. THROUGH CONTACTS WITH INDUSTRY AND THE BLM PLANNING SYSTEM, PROPOSALS FOR DEVELOPMENT WITHIN PROJECT AREAS ARE DESCRIBED.

STUDY AFFILIATION

PART OF 'WEST CENTRAL NORTH DAKOTA ENERGY DEVELOPMENT

ENVIRONMENTAL IMPACT STATEMENT,' U.S. BUREAU OF LAND MANAGEMENT AND OLD WEST REGIONAL COMMISSION, SERIAL NUMBER 00000541, ERIS PROJECTS LISTING, VOL. 2, NO. 1, JANUARY, 1977.

REPORTS AND PUBLICATIONS

DRAFT EIS SCHEDULED FOR COMPLETION SEPT. 1977.
FINAL EIS SCHEDULED FOR COMPLETION MAR. 1978.
AVAILABLE FROM BLM, BILLINGS, MT

*****

00000720

PROJECT TITLE

LAND USE WORK GROUP - WEST CENTRAL ND REGIONAL EIS

INVESTIGATORS

GREGG LARSON

RESEARCH INSTITUTION

U.S. BUREAU OF LAND MANAGEMENT / 222 N. 32ND ST. / BILLINGS, MT 59107

PRIMARY SPONSOR

U.S. BUREAU OF LAND MANAGEMENT

PRIMARY FUNDING AMOUNT

600,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)

SECONDARY FUNDING AMOUNT(S)

192,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)

TIME FRAME

JUNE 1976 TO MAR. 1978

LOCATION

ND - BURLEIGH, MORTON, MCLEAN, DUNN, STARK, MERCER, AND OLIVER COUNTIES

ABSTRACT

UNDER THE GENERAL CATEGORY OF LAND USE, DESCRIBE AND ANALYZE THE EXISTING REGIONAL ENVIRONMENT AND IMPACTS ASSOCIATED WITH COAL AND ENERGY RELATED DEVELOPMENT. THIS DESCRIPTION AND ANALYSIS IS BROKEN DOWN INTO THREE SUB-CATEGORIES: LAND USE; TRANSPORTATION SYSTEMS, INCLUDING HIGHWAY, RAILROAD, AIR AND TRANSMISSION; AND CONSTRAINTS AND CONTROLS, INCLUDING SURFACE AND SUBSURFACE OWNERSHIP AND PLANNING AND ZONING.

STUDY AFFILIATION

PART OF 'WEST CENTRAL NORTH DAKOTA ENERGY DEVELOPMENT ENVIRONMENTAL IMPACT STATEMENT,' U.S. BUREAU OF LAND MANAGEMENT AND OLD WEST REGIONAL COMMISSION, ERIS PROJECTS LISTINGS, VOL. 2, NO. 1, JANUARY, 1977.

REPORTS AND PUBLICATIONS

DRAFT EIS SCHEDULED FOR COMPLETION SEPT., 1977.
FINAL EIS SCHEDULED FOR COMPLETION MAR., 1978. AVAILABLE FROM BLM, BILLINGS, MT.

*****

00000721

PROJECT TITLE

PETROGRAPHIC COMPOSITION AND CHEMICAL PROPERTIES OF LIGNITE AND SUBBITUMINOUS COALS

PROJECT NUMBER

DES74-24518

INVESTIGATORS

T. C. TING

RESEARCH INSTITUTION

UNIV. OF WEST VIRGINIA, DEPT. OF GEOLOGY & GEOGRAPHY
MORGANTOWN, WV 26506

COOPERATOR

UNIV. OF NORTH DAKOTA

PRIMARY SPONSOR

NATIONAL SCIENCE FOUNDATION, DIV. OF ENVIRONMENTAL SCIENCES

PRIMARY FUNDING AMOUNT

1974 - 24,000 / 1975 - 22,000

TIME FRAME

1974 TO CONTINUING

LOCATION

ND WV

ABSTRACT

DESCRIPTION: RESEARCH IS CONDUCTED TO INVESTIGATE THE PETROGRAPHIC COMPOSITION OF LIGNITE AND SUBBITUMINOUS COALS FROM THE POINT OF VIEW OF INDIVIDUAL SEAMS AND REGIONAL CHANGES. RESEARCH IS ALSO CONDUCTED TO STUDY THE TRACE ELEMENTS THAT CAUSE FOULING OF BOILER TUBES IN LIGNITE-FIRED POWER PLANTS. STUDIES ARE ALSO MADE ON THE SOLUBILITY OF INDIVIDUAL COAL COMPONENTS IN ANTHRACENE OIL IN THE PRESENCE OF HYDROGEN AND CARBON MONOXIDE AT ELEVATED TEMPERATURE AND PRESSURE CONDITION. A RESEARCH PROJECT IS ALSO INITIATED TO INVESTIGATE THE RECOVERY OF URANIUM FROM LOW-GRADE URANIFEROUS LIGNITE.

*****

00000722

PROJECT TITLE

FORT UNION COAL CHARACTERISTICS

INVESTIGATORS

ROBERT E. MATSON

RESEARCH INSTITUTION

MONTANA BUREAU OF MINES & GEOLOGY / BUTTE, MT 59701

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

PRIMARY FUNDING AMOUNT

100,000

TIME FRAME

NOV. 15, 1976 TO NOV., 15, 1977

LOCATION
MT

ABSTRACT
THE PRIMARY OBJECTIVES OF THIS PROJECT ARE TO COLLECT, EVALUATE, CHARACTERIZE AND INTEGRATE NEW DATA ON THE ECONOMICALLY IMPORTANT COAL BEDS OF THE FORT UNION REGION OF EASTERN MONTANA AND NORTHEASTERN WYOMING. THE NEW DATA WILL ASSIST IN EVALUATION OF FEDERAL LANDS TO MEET THE NEW REQUIREMENTS UNDER THE COAL LEASING ACT OF 1975. IT WILL ASSIST IN SOLVING CORRELATION PROBELMS AND PROVIDE DATA ON ECONOMICALLY RECOVERABLE COAL. THE PROJECT IS INTEGRATED WITH ONGOING SURFACE MAPPING BEING CARRIED OUT BY USGS GEOLOGISTS.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'U.S.G.S. COAL EXPLORATION,' SERIAL NUMBER 00000301 AND 'U.S.G.S. MINE SAMPLING PROJECT,' SERIAL NUMBER 00000302, ERIS QUARTERLY REPORT, VOL. 1, NO. 2, FEBRUARY, 1976.

REPORTS AND PUBLICATIONS
R. E. MATSON AND J. W. BLUMER. QUALITY AND RESERVES OF STRIPPABLE COAL, SELECTED DEPOSITS, SOUTHEASTERN MONTANA, 1973. MONTANA BUREAU OF MINES & GEOLOGY, BULLETIN 91. $8.00. OPEN FILE REPORTS OF DRILL LOGS, LITHOLOGIC LOGS, AND CORE ANALYSES.

*****

00000723

PROJECT TITLE
ANG COAL GASIFICATION COMPANY; NORTH DAKOTA PROJECT DRAFT ENVIRONMENTAL STATEMENT

PROJECT NUMBER
INT. DES-77-11

RESEARCH INSTITUTION
U.S. BUREAU OF RECLAMATION, UPPER MISSOURI REGIONAL OFFICE
316 N. 26TH STREET / P.O. BOX 2553 / BILLINGS, MT 59103

PRIMARY SPONSOR
U.S. BUREAU OF RECLAMATION / DEAN LOOMIS

PRIMARY FUNDING AMOUNT
INHOUSE PROJECT - FUNDING NOT SPECIFIED.

TIME FRAME
DRAFT RELEASED MARCH 23, 1977. PRELIMINARY DRAFT SENT TO DEPARTMENT BY JUNE 15, 1977.

LOCATION
ND - MERCER CO.

ABSTRACT
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT ASSESSES A COAL GASIFICATION PROJECT PROPOSED BY ANG COAL GASIFICATION COMPANY FOR MERCER COUNTY, NORTH DAKOTA. THE COMPANY HAS REQUESTED A CONTRACT WITH THE BUREAU TO SUPPLY 17,000 ACRE-FEET OF WATER ANNUALLY FROM LAKE SAKAKAWEA. THE STATEMENT COVERS IMPACTS OF CONSTRUCTION AND OPERATION OF THE GASIFICATION PLANT AND ITS ASSOCIATED FACILITIES, SUCH AS THE COAL MINE, RAILRAOD SPUR, WATER INTAKE AND PIPELINE, AND PRODUCT DELIVERY PIPELINE. IT ALSO ADDRESSES MAJOR CUMULATIVE IMPACTS OF CONSTRUCTION AND OPERATION OF A 880 MW COAL-FIRED ELECTRIC GENERATING PLANT PROPOSED FOR CONSTRUCTION ADJACENT TO THE GASIFICATION PLANT.

REPORTS AND PUBLICATIONS
COPIES OF THE EIS ARE AVAILABLE FOR INSPECTION AT THE FOLLOWING LOCATIONS: 1. OFFICE OF THE ASSISTANT TO THE COMMISSIONER-ECOLOGY, ROOM 7620, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, WASHINGTON, DC 20240, TELEPHONE 202-343-4991. 2. DIVISION OF ENGINEERING SUPPORT, TECHNICAL SERVICES BRANCH, E&R CENTER, DENVER FEDERAL CENTER, DENVER, COLORADO, TELEPHONE 303-234-3007. 3. UPPER MISSOURI REGIONAL OFFICE, BUREAU OF RECLAMATION, 316 NORTH 26TH STREET, BILLINGS, MONTANA 59103, TELEPHONE 406-657-6605. 4. MISSOURI-SOURIS PROJECTS OFFICE, BUREAU OF RECLAMATION, OLD POST OFFICE BUILDING, BISMARCK, NORTH DAKOTA 58501, TELEPHONE 701-255-4011. COPIES ARE ALSO AVAILABLE FOR INSPECTION AT PUBLIC LIBRARIES IN DICKINSON, BISMARCK AND BEULAH, NORTH DAKOTA. SINGLE COPIES OF THE DRAFT ENVIRONMENTAL STATEMENT MAY BE OBTAINED ON REQUEST TO THE ACTING COMMISSIONER OF RECLAMATION OR THE REGIONAL DIRECTOR, ATTENTION: 415, BUREAU OF RECLAMATION, P.O. BOX 2553, BILLINGS, MONTANA 59103.

*****

00000724

PROJECT TITLE
DEVELOPMENT OF COAL RESOURCES IN SOUTHCENTRAL WYOMING

INVESTIGATORS
ED KOY

RESEARCH INSTITUTION
U.S. BUREAU OF LAND MANAGEMENT / P.O. BOX 670 / RAWLINS, WY 82301

COOPERATOR
U.S. GEOLOGICAL SURVEY / U.S. FISH & WILDLIFE SERV. / U.S. BUREAU OF MINES

PRIMARY SPONSOR
U.S. BUREAU OF LAND MANAGEMENT

PRIMARY FUNDING AMOUNT
750,000

TIME FRAME
NOV. 1976 TO DEC. 1977

LOCATION
SOUTHCENTRAL WYOMING - CARBON, EASTERN SWEETWATER COS.

ABSTRACT
THE PROPOSED ACTION IS BASED ON FORMAL INDUSTRY PROPOSALS AND PROJECTED DEVELOPMENT RELATED TO THE MINING OF FEDERAL

COAL BY 1980, 1985, AND 1990. THIS ENVIRONMENTAL STATEMENT IS DEVELOPED IN TWO PARTS: A REGIONAL ANALYSIS ON CUMULATIVE IMPACTS OF POTENTIAL COAL DEVELOPMENT IN THE REGION AND SITE SPECIFIC MINING AND RECLAMATION PLAN ANALYSES. INVOLVED ARE: A. APPROVAL OF THREE MINING AND RECLAMATION PLANS ON EXISTING LEASES. B. ISSUANCE OF TEN COMPETITIVE COAL LEASES SUPPORTED BY PRELIMINARY MINING AND RECLAMATION PLANS. C. ISSUANCE OF NINE PREFERENCE RIGHT LEASES, SEVEN IN WYOMING AND TWO IN COLORADO. D. ISSUANCE OF 48 RIGHTS-OF-WAY FOR ELEVEN POWER LINES, TEN RAILROAD SPURS, NINE TELEPHONE LINES, NINE ACCESS ROADS, ONE WATER PIPELINE, TWO CONVEYOR SYSTEMS, AND ONE TAILINGS POND. RIGHTS-OF-WAY WOULD ALSO BE REQUIRED FOR THE RELOCATION OF ONE NATURAL GAS PIPELINE, THREE SEGMENTS OF A 230-KV POWER LINE, ONE STATE HIGHWAY, ONE COUNTY ROAD, AND ONE TELEPHONE LINE. ANNUAL PRODUCTION ESTIMATES TOTAL 9.4 MILLION TONS BY 1980, 22.7 MILLION TONS BY 1985, AND 26.2 MILLION TONS BY 1990. COMBINED WITH EXISTING MINING EXPECTED TO CONTINUE THROUGH 1990 A TOTAL OF 34.8 MILLION TONS WOULD BE PRODUCED ANNUALLY BY THAT DATE. ADDITIONAL POPULATION GENERATED BY THIS AND OTHER DEVELOPMENT WOULD BE 43,742 BY 1990. WITHOUT ADDITIONAL COAL DEVELOPMENT, THE POPULATION WILL INCREASE TO 34,718.

REPORTS AND PUBLICATIONS

DEVELOPMENT OF COAL RESOURCES IN SOUTHCENTRAL WYOMING. AVAILABLE UPON COMPLETION OF STUDY. CONTACT CORE TEAM FOR AVAILABILITY INFORMATION: ROB CURRIER, U.S. BUREAU OF LAND MANAGEMENT, 1700 W. LINCOLN WAY, C/O ES CORE TEAM, CHEYENNE, WY 82001

*****

00000725

PROJECT TITLE

DEVELOPMENT OF COAL RESOURCES IN SOUTHWEST WYOMING

INVESTIGATORS

FRANCES EICKBUSH

RESEARCH INSTITUTION

U.S. BUREAU OF LAND MANAGEMENT / P.O. BOX 1869 /
ROCK SPRINGS, WY 82901

COOPERATOR

U.S. GEOLOGICAL SURVEY / U.S. FISH & WILDLIFE SERV. /
U.S. BUREAU OF MINES

PRIMARY SPONSOR

U.S. BUREAU OF LAND MANAGEMENT

PRIMARY FUNDING AMOUNT

750,000

TIME FRAME

NOV. 1976 TO DEC. 1977

LOCATION

SOUTHEAST WYOMING - LINCOLN, UINTA, AND PORTION OF SWEETWATER COUNTIES.

ABSTRACT

THE PROPOSED ACTION IS BASED ON FORMAL INDUSTRY PROPOSALS AND PROJECTED DEVELOPMENT RELATING TO THE MINING OF FEDERAL COAL BY 1980, 1985 AND 1990. THIS ENVIRONMENTAL STATEMENT IS DEVELOPED IN TWO SEPARATE PARTS: A REGIONAL ANALYSIS ON CUMULATIVE IMPACTS OF POTENTIAL DEVELOPMENT IN THE REGION AND FIVE SITE SPECIFIC MINING AND RECLAMATION PLAN ANALYSES. INCLUDED ARE: A. APPROVAL OF FIVE MINING AND RECLAMATION PLANS ON EXISTING LEASES. B. FUTURE PROBABLE ACTION ON FIVE EXISTING LEASES WITHOUT PLANS (REFERRED TO HEREIN AS PROJECTED MINING AND RECLAMATION PLANS (FUTURE PROPOSALS)). C. ISSUANCE OF SEVEN PREFERENCE RIGHT LEASES AND APPROVAL OF TWO PROSPECTING PERMIT EXTENSIONS (ALSO WITHOUT FIRM INDUSTRY PROPOSALS FOR DEVELOPMENT). D. ISSUANCE OF 25 LAND USE AUTHORIZATIONS FOR ANCILLARY FACILITIES RELATED TO THE ABOVE.

ANNUAL PRODUCTION ESTIMATES TOTAL 12.8 MILLION TONS BY 1980, 20.2 MILLION TONS BY 1985 AND 20.2 MILLION TONS BY 1990. COMBINED WITH EXISTING MINING EXPECTED TO CONTINUE THROUGH 1990 A TOTAL OF 36.2 MILLION TONS WOULD BE PRODUCED ANNUALLY BY THAT DATE. COAL RELATED DEVELOPMENT WOULD TOTAL 5 MINES, 95 MILES OF RAILROAD SPURS, 117 MILES OF ROAD, 71 MILES POWERLINES AND 74 MILES OF TELEPHONE LINES. ADDITIONAL POPULATION GENERATED BY THIS DEVELOPMENT WOULD BE 14,562 BY 1990.

REPORTS AND PUBLICATIONS

DEVELOPMENT OF COAL RESOURCES IN SOUTHWEST WYOMING. AVAILABLE UPON COMPLETION OF STUDY. CONTACT CORE TEAM FOR AVAILABILITY INFORMATION: ROB CURRIER, U.S. BUREAU OF LAND MANAGEMENT, 1700 W. LINCOLN WAY, C/O ES CORE TEAM, CHEYENNE, WY 82001.

1.2 RECLAMATION

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00000726
PROJECT TITLE
PRELIMINARY INVESTIGATIONS - PASTURE AND RANGES
PROJECT NUMBER
ND-3902
INVESTIGATORS
DR. WARREN C. WHITMAN
RESEARCH INSTITUTION
NORTH DAKOTA STATE UNIV., DEPT. OF BOTANY
FARGO, ND 59102
PRIMARY SPONSOR
NORTH DAKOTA UNIV., AG EXP. STATION
PRIMARY FUNDING AMOUNT
FY 75 - 3,632
TIME FRAME
JULY 1975 TO CONTINUING
LOCATION
ND
ABSTRACT

MAJOR AREAS OF WORK UNDER THIS PROJECT IN 1975 INCLUDED EVALUATION OF SMALL PLOT TRIALS OF GRASSES AND PASTURE TYPE ALFALFAS AT THE DICKINSON STATION AND WORK ON SPOIL BANK REVEGETATION WITH NATIVE PLANT SPECIES. YIELDS OF CRESTED, WESTERN, INTERMEDIATE, AND PUBESCENT WHEATGRASS STRAINS WERE VERY GOOD IN 1975. MOST PASTURE-TYPE ALFALFAS SHOWED RAPID AND VIGOROUS EARLY GROWTH WITH SLOW REGROWTH AFTER CUTTING. UNDER THE TRIAL CONDITIONS MOST VARIETIES EXHIBITED THE SPREADING HABIT ONLY SLIGHTLY. A NEW TRIAL WITH 5 ADDITIONAL VARIETIES WAS SEEDED. SPOIL BANK REVEGETATION STUDIES IN COOPERATION WITH AGRICULTURAL RESEARCH STATION CONTINUED TO SHOW GOOD PROGRESS. IN PLOTS WHERE PRAIRIED HAY CONTAINING MATURE SEED OF A NUMBER OF NATIVE GRASSES AND FORBS WAS SPREAD IN WEEDY COVER IN THE FALL OF 1974, A NUMBER OF NATIVE SPECIES WERE ESTABLISHED. PLANT COUNTS DURING THE 1975 SUMMER SEASON SHOWED THAT 15 TO 20 SPECIES WERE FOUND ON MOST OF THE PLOTS. NATIVE GRASS SPECIES MOST SUCCESSFUL ON THE PLOTS INCLUDED PRAIRIE JUNEGRASS, WESTERN WHEATGRASS, SLENDER WHEATGRASS NEEDLE AND THREAD, AND GREEN NEEDLEGRASS. BLUE GRAMA SEEDLING DID NOT APPEAR ON THE PLOTS UNTIL LATE IN THE SEASON AT WHICH TIME THEY WERE FAIRLY NUMEROUS. GOOD TRANSPLANT SUCCESS.

REPORTS AND PUBLICATIONS
PIONEER VEGETATION ON VARIOUS TREATMENT OF COAL OVERBURDEN: PROCEEDINGS OF NORTH DAKOTA ACADEMY OF SCIENCE (ABSTRACT): 1975

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00000727
PROJECT TITLE
SALT TRANSLOCATION IN SALINE-SODIC MINE SPOILS
INVESTIGATORS
D. J. DOLLHOPF / M. G. KLAGES / R. L. HODDER
RESEARCH INSTITUTION
MONTANA STATE UNIV., AG. EXP. STATION
BOZEMAN, MT 59715
PRIMARY SPONSOR
U.S. DEPT. OF AGRICULTURE, COOP. STATE RESEARCH SERVICE
WASHINGTON, D. C. 20250
PRIMARY FUNDING AMOUNT
68,000
TIME FRAME
JULY 1976 TO SEPT. 1978
ABSTRACT

GEOLOGICALLY THE COAL RICH DECKER, MONTANA REGION TENDS TO CONTAIN OVERBURDEN MATERIALS WITH SALINE AND/OR SODIC ZONES. BECAUSE OF THIS FACT THE RECLAMATION POTENTIAL OF THESE SPOILS IS OF CONCERN.

THIS STUDY IS INTENDED TO FORMULATE SPECIFIC RECOMMENDATIONS FOR OPTIMIZATION OF SALINE AND/OR SODIC SPOIL RECLAMATION. RESEARCH EMPHASIS WILL BE PLACED UPON MEASUREMENT OF SOIL SALT TRANSLOCATION OVER TIME AND UPON FIELD IDENTIFICATION OF SALINE AND/OR SODIC SPOIL PROBLEMS.

IDENTIFICATION OF SUCH PROBLEMS IN MONTANA SPOILS IS A COMPLEX PROBLEM. SALT DISTRIBUTION IN THESE SPOILS IS VERY HETEROGENEOUS AND POINT SAMPLING WITH CORE BARRELS, EVEN IN AN INTENSIVE MANNER, HAS NOT ACCEPTABLY DESCRIBED THE SOIL SALT CONTENT. IT IS THE INTENT OF THIS STUDY TO TEST THE 4-PROBE ELECTRICAL RESISTIVITY METHOD FOR MEASUREMENT OF SOIL SALTS. THIS TECHNIQUE IS RAPID, REQUIRES NO SOIL SAMPLING, AND GIVES AN INTEGRATED SALT MEASUREMENT OVER A LARGE VOLUME OF SOIL. DECKER COAL COMPANY, DECKER, MONTANA HAS AGREED TO PROVIDE THE RESEARCH AREA. (MEAC)

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00000728
PROJECT TITLE
MEASUREMENT AND SIMULATION OF PHYSICAL TRANSFORMATION

OF OVERBURDEN MATERIALS WITH TIME
PROJECT NUMBER
C1B1-B1
INVESTIGATORS
DR. DONALD R. REICHMUTH / ALFRED C. SCHEER (MONTANA STATE UNIV., DEPT. OF CIVIL ENG.) / DR. EDW. BURROUGHS (U.S. FOREST SERVICE, IF&RES)
RESEARCH INSTITUTION
U.S FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FORESTRY SCIENCES LABORATORY, BOX 1376 / BOZEMAN, MT 59715
COOPERATOR
BAUKEL-NOONAN MINING COMPANY / CENTER, ND
PRIMARY SPONSOR
U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER
RON HILL / CINCINNATI, OH 45268
PRIMARY FUNDING AMOUNT
FY 76 - 50,000 / FY 77 - 134,400
TIME FRAME
JUNE 24, 1975 TO JUNE 30, 1979
LOCATION
MT ND
ABSTRACT

DRILL LOGS ARE BEING CORRELATED WITH OBSERVATIONS OF GEOLOGIC FORMATIONS IN MINE HEADWALLS TO DEVELOP BETTER TECHNIQUES FOR RECOGNIZING OVERBURDEN MATERIALS WITH CHARACTERISTICS OF PARTICULAR IMPORTANCE FOR AQUIFER RECONSTRUCTION. OVERBURDEN EXCAVATION AND SPOILS PLACEMENT OPERATIONS ARE BEING STUDIED IN DETAIL TO PREDICT WHERE AND HOW MATERIAL FROM A PARTICULAR FORMATION WILL BE DEPOSITED IN A SPOIL PILE. OBJECTIVES ARE TO: PREDICT THE PHYSICAL TRANSFORMATIONS OF OVERBURDEN MATERIALS THAT AFFECT HYDROLOGIC FUNCTIONING AND MASS STABILITY WITH TIME, DETERMINE THE MOST EFFICIENT TECHNIQUES FOR MEASURING AND/OR SIMULATING PHYSICAL TRANSFORMATIONS OVER TIME IN ORDER TO PREDICT THE RESULTING PHYSICAL AND HYDROLOGIC CHARACTERISTICS; DERIVE PREDICTIVE EQUATIONS FOR THESE CHARACTERISTICS THAT AFFECT WATER QUALITY AND PLANT ESTABLISHMENT TO DEVELOP PRESCRIPTIONS FOR EFFECTIVE SPOILS PLACEMENT.

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00000729
PROJECT TITLE
MASS INSTABILITY OF REGRADED COAL MINE SPOILS IN THE NORTHERN GREAT PLAINS
PROJECT NUMBER
C18S-B18
INVESTIGATORS
CRAIG COCKRELL / DR. EDWARD BURROUGHS
RESEARCH INSTITUTION
U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FORESTRY SCIENCES LAB. , P.O. BOX 1376 / BOZEMAN, MT 59715
PRIMARY SPONSOR
U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER
RON HILL / CINCINNATI, OH 45268
PRIMARY FUNDING AMOUNT
FY 77 - 21,500
TIME FRAME
APR. 1, 1977 TO DEC. 30, 1979
LOCATION
MT ND
ABSTRACT

THE OBJECTIVES OF THIS WORK ARE: 1. ESTABLISH THE MAGNITUDE OF THE PROBLEM OF SUBSIDENCE OF GRADED SPOILS IN THE SODIC MATERIALS OF MONTANA AND NORTH DAKOTA. 2. INVESTIGATE THE MECHANICS OF THIS PHENOMENON. 3. RELATE SUBSIDENCE TO SITE FACTORS SUCH AS SEGREGATION OF MATERIALS DURING PLACEMENT, TIME OF YEAR OF PLACEMENT, CLIMATIC, AND HYDROLOGIC FACTORS. 4. DEVELOP GUIDELINES FOR REDUCING THE ADVERSE EFFECT OF SUBSIDENCE.

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00000730
PROJECT TITLE
ERODIBILITY OF TOPSOIL AND SPOIL MATERIALS BY WATER
PROJECT NUMBER
C1A1-B5
INVESTIGATORS
WILLIAM HARTSOG / DR. EDWARD BURROUGHS
RESEARCH INSTITUTION
U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FOREST SCIENCES LAB. / BOZEMAN, MT 59715
PRIMARY SPONSOR
U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER
PRIMARY FUNDING AMOUNT
FY 76 - 33,500 / FY 77 - 86,300
TIME FRAME
JAN. 1976 TO DEC. 1979
LOCATION
MT ND WY
ABSTRACT

THE OBJECTIVES ARE TO: 1. DEVELOP A TECHNIQUE THAT CAN BE USED IN THE FIELD OR LABORATORY TO MEASURE THE ERODIBILITY OF TOPSOIL AND SPOIL MATERIALS. 2. CORRELATE THESE MEASUREMENTS OF ERODIBILITY WITH OTHER 'STANDARD' METHODS AND TECHNIQUES. 3. DEVELOP METHODS FOR ESTIMATING ERODIBILITY USING THE PHYSICAL CHARACTERISTICS OF TOPSOIL AND SPOIL MATERIALS.

A SMALL PORTABLE RAINULATOR HAS BEEN BUILT AND IS BEING TESTED IN THE LABORATORY ON SELECTED SPOIL MATERIALS TO DISCOVER THOSE PHYSICAL AND CHEMICAL PROPERTIES WHICH HAVE THE GREATEST EFFECT UPON ERODIBILITY.

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00000731

PROJECT TITLE

DETERMINE PHYSICAL, CHEMICAL, AND BIOLOGICAL PROPERTIES OF SPOIL MATERIALS RESULTING FROM COAL SURFACE MINING THAT INHIBIT PLANT GROWTH

PROJECT NUMBER

A3C3-LIA (IH)

INVESTIGATORS

B. Z. RICHARDSON (USFS - LOGAN, UT) / N. FRISCHKNECHT (USFS - PROVO, UT)

RESEARCH INSTITUTION

U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
PROVO, UT

PRIMARY SPONSOR

U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING

SECONDARY SPONSOR(S)

U.S. BUREAU OF LAND MANAGEMENT, EMRIA
U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION

PRIMARY FUNDING AMOUNT

8,000

SECONDARY FUNDING AMOUNT(S)

11,000 (BLM) / 12,000 (USFS, IF&RES)

TIME FRAME

OCT. 1972 TO DEC. 1978

LOCATION

MT UT

ABSTRACT

PROBLEM: SPOIL MATERIALS FROM WESTERN COAL MINING ARE GENERALLY SALINE. SOME ARE SUFFICIENTLY SALINE TO BE TOXIC, BOTH FROM A PH STANDPOINT AND FROM THE STANDPOINT OF GREATER SOLUBILITY OF SOME SEMI METAL ELEMENTS, SUCH AS SELENIUM AND BORON.

OBJECTIVES: TO DETERMINE THE PHYSICAL, CHEMICAL, AND BIOLOGICAL EFFECTS ON PLANT GROWTH OF HIGHLY SALINE COAL SURFACE-MINE SPOILS.

APPROACH: 1. BIOASSAY OF SPOILS WITH SALINE-TOLERANT PLANTS IN GREENHOUSE. 2. FIELD TRIALS OF SALINE-TOLERANT PLANTS ON SPOILS. 3. TREATMENT OF SPOILS WITH AMENDMENTS. (SEAM)

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00000732

PROJECT TITLE

A FIELD METHOD OF EVALUATING SALINITY AND UNIFORMITY OF OVERBURDEN MIX

PROJECT NUMBER

RM-825

INVESTIGATORS

TERUO YAMAMOTO

RESEARCH INSTITUTION

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD 57701

PRIMARY SPONSOR

U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING
145 GRAND AVE / BILLINGS, MT 59101

PRIMARY FUNDING AMOUNT

3,206

TIME FRAME

AUG. 1976 TO 1977

LOCATION

WY - ARCO REVEGETATION AREA EAST OF RENO JUNCTION, CAMPBELL CO., WYOMING

ABSTRACT

OBJECTIVES: TO EXAMINE THE USE OF SURFACE ELECTRICAL RESISTANCE MEASUREMENTS IN ASSESSING SALINITY AND STRATIFICATION AND/OR MIXING OF SPOIL EMPLACEMENT AND OVERBURDEN.

METHODS: (FIELD) -- THE PORTABLE RESISTIVITY APPARATUS (STRATASCOUT OF SOILTEST) WILL BE USED TO MEASURE RESISTANCE AT THE BULK SOIL SAMPLE POINTS ON TEST AND CHECK PLOTS. THE ELECTRODES WILL BE SPREAD ACCORDING TO THE 'WENNER' CONFIGURATION. (LAB) -- VALUES OF ELECTRICAL CONDUCTIVITY WILL BE DERIVED FROM SOIL (SPOIL) SATURATION EXTRACTS.

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00000733

PROJECT TITLE

EVALUATION OF PURPOSELY MIXED OVERBURDEN TO SIMULATE DESIRABLE SOIL CONDITIONS.

PROJECT NUMBER

RM-818.1S / RM-818.2S

INVESTIGATORS

TERUO YAMAMOTO / RANDALL W. WHITE

RESEARCH INSTITUTION

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD

COOPERATOR

ATLANTIC-RICHFIELD CO.

PRIMARY SPONSOR

U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING
145 GRAND / BILLINGS, MT 59102

PRIMARY FUNDING AMOUNT

10,005

TIME FRAME

JUNE 1976 TO JUNE 1977

LOCATION

WY - CAMPRELL CO.

ABSTRACT

OBJECTIVES: 1. TO DETERMINE THE PHYSICAL AND CHEMICAL PROPERTIES OF COAL OVERBURDEN AND THEIR VARIATION WITH AND WITHOUT 'MIXING.' PARAMETERS TO BE INVESTIGATED ARE AS FOLLOWS: A. INFILTRATION RATES, B. TEXTURE AND BULK DENSITY, C. SOIL MOISTURE RETENTION, D. NATURAL FERTILITY, E. SALINITY AND ALKALINITY, AND F. CLAY MINERALOGY. 2. TO DETERMINE TOTAL AND EXTRACTABLE TRACE ELEMENT CONCENTRATIONS NORMALLY NOT DETERMINED IN ROUTINE AGRICULTURAL ANALYSIS, E.G. LEAD, CADMIUM, MERCURY, ARSENIC, CHROMIUM, AND SELENIUM. 3. COMPARE THE TRACE ELEMENT STATUS BETWEEN CHECK AND REVEGETATION PLOTS. METHODS: A SUBSURFACE GEOLOGIC STUDY WILL BE DONE PRIOR TO PREPARATION OF PLOTS BY SEGREGATION OF SOIL AND HANDLING OF OVERBURDEN BY HEAVY EARTH MOVING MACHINES. THE TOTAL PLOT AREA WILL BE APPROXIMATELY 200 BY 400 FEET. THE ORDER OF REMOVAL AND DUMPING BY LOADERS IS EXPECTED TO THOROUGHLY MIX THE 1 TO 10-FOOT OVERBURDEN IN MUCH THE SAME WAY IT WILL BE DONE IN ACTUAL MINING OPERATIONS. MATERIALS OF THE SPOILS AND OVERBURDEN WILL BE RANDOMLY SAMPLED AT THE TEST AND CHECK PLOTS AND THEIR PHYSICAL AND CHEMICAL PROPERTIES ANALYZED. SPOIL EVALUATION IS AT ARCO'S RENO JUNCTION MINE, RENO JUNCTION, WY.

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00000734

PROJECT TITLE

CULTURAL TREATMENT FOR ESTABLISHMENT OF SHRUB AND TREE SPECIES ON COAL MINE SPOILS, ARCO BLACK THUNDER COAL AREA, CAMPBELL COUNTY

PROJECT NUMBER

RM-816

INVESTIGATORS

HOWARD K. ORR / ARDELL J. BJUGSTAD

RESEARCH INSTITUTION

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD

COOPERATOR

ATLANTIC RICHFIELD CO. / U.S. SOIL CONSERVATION SERVICE / U.S. FOREST SERVICE, MEDICINE BOW NATIONAL FOREST

PRIMARY SPONSOR

U.S. FOREST SERVICE SURFACE ENVIRONMENT AND MINING
145 GRAND AVE. / BILLINGS, MT 59102

PRIMARY FUNDING AMOUNT

22,400

TIME FRAME

APR. 1976 TO APR. 1979

LOCATION

WY - CAMPBELL CO., BLACK THUNDER MINE

ABSTRACT

PRINCIPAL PURPOSE IS TO DETERMINE UNDER WHAT COMBINATIONS OF SELECTED CULTURAL TREATMENTS SELECTED SHRUB AND TREE SPECIES ESTABLISH AND GROW BEST ON SURFACE COAL MINE SPOILS IN NORTHEAST WYOMING. THE PLOT AREA ON WHICH THE STUDY WILL BE ESTABLISHED WILL BE PREPARED BY STRIPPING OFF ONE FOOT OF SURFACE MATERIAL, EXCAVATION, MIXING, AND REPLACEMENT OF OVERBURDEN TO 10 FEET DEPTH AND FINISH DRESSING WITH 6 INCHES SURFACE SOIL. LAYOUT WILL INVOLVE A 3-BLOCK REPLICATION OF 5 SPECIES BY 8 TREATMENTS, 9 PLANTS EACH TREATMENT PLOT (3 X 3 FOOT SPACING). ALL PLANTING STOCK WILL BE CONTAINER GROWN IN GREENHOUSES. SPECIES ARE FOURWING SALTBUSH, ROCKY MOUNTAIN JUNIPER, BIG SAGEBRUSH, WINTERFAT, AND SHRUBBY CINQUEFOIL. TREATMENTS INCLUDE WOOD CHIP MULCH (SURFACE, 1-2 INCHES DEEP. FERTILIZER (40-80-0 POUNDS N, P2O5, K2O PER ACRE). IRRIGATION (DRIP METHOD, ONE GALLON PER PLANT EACH 4 DAYS, THROUGHOUT GROWING SEASON, MAY 1 - SEPTEMBER 30), ALL COMBINATIONS OF THE PRECEDING TREATMENTS, AND UNTREATED CHECK. ALL PLANTS WILL BE MEASURED SOON AFTER PLANTING AND THEN AT THE END OF EACH GROWING SEASON, AND EACH SPRING FOR SURVIVAL AND GROWTH. THE MAIN AREA WILL BE FENCED TO EXCLUDE LIVESTOCK AND RABBITS. COROLLARY SITE AND CLIMATIC DATA WILL BE OBTAINED.

00000735

PROJECT TITLE

MEASUREMENTS OF THE EFFECT OF MINE-RELATED ROADS ON THE SUFACE WATER RESOURCE

PROJECT NUMBER

A381-82

INVESTIGATORS

ROBERT S. JOHNSTON (U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION / FORESTRY SCIENCES LABORATORY, 860 NORTH 12TH EAST, LOGAN, UT 84321) / DR. EDWARD BURROUGHS (U.S. FOREST SERVICE, INTERMTN. STATION - BOZEMAN, MT)

RESEARCH INSTITUTION

U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FORESTRY SCIENCES LAB, P.O. BOX 1376 / BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER
RON HILL / CINCINNATI, OH 45268

PRIMARY FUNDING AMOUNT

FY 76 - 20,500 / FY 77 - 67,200

TIME FRAME

JAN. 1, 1976 TO JUNE 30, 1979

LOCATION

MT ND WY

ABSTRACT

THE OBJECTIVES OF THIS WORK ARE TO: 1. COLLECT DATA ON WATER YIELD AND WATER QUALITY OF SURFACE RUNOFF FROM MINE-RELATED HAUL ROADS. 2. EVALUATE WHETHER ROADS CAUSE ANY OTHER ADVERSE EFFECTS SUCH AS PEAKING OF STREAMFLOW OR CHANNEL EROSION. 3. CORRELATE THE EFFECTS OF ROADS ON WATER YIELD AND WATER QUALITY TO PARAMETERS OF THE ROAD. 4. USE THESE FINDINGS TO CALIBRATE MATHEMATICAL MODELS FOR ESTIMATING THE EFFECTS OF MINE HAUL ROADS UPON THE WATER RESOURCE.

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00000736

PROJECT TITLE

MEASUREMENTS OF FUGITIVE DUST FROM MINE-RELATED ROADS AND ITS EFFECT ON THE WATER RESOURCE

PROJECT NUMBER

A381-84

INVESTIGATORS

DR. GEORGE BELT (UNIV. OF IDAHO, SCHOOL OF FORESTRY) /

RESEARCH INSTITUTION

U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FORESTRY SCIENCES LAB / P.O. BOX 1376 / BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER
RON HILL / CINCINNATI, OH 45268

PRIMARY FUNDING AMOUNT

FY 76 - 12,500 / FY 77 - 61,400

TIME FRAME

MAY 1976 TO DEC. 1976

LOCATION

WESTERN COAL REGION - MT ND SD WY ID

ABSTRACT

THIS IS A PRELIMINARY STUDY PREPARATORY TO A FULL-SCALE RESEARCH EFFORT. THE OBJECTIVES OF THIS STUDY ARE: 1. EVALUATE THE MAGNITUDE OF THE PROBLEM OF FUGITIVE DUST FROM ROADS AND ITS EFFECT UPON THE WATER RESOURCES. 2. DESCRIBE THOSE FACTORS OF ROADS, TRAFFIC, VEHICLE SIZE, AND CLIMATE WHICH WILL AFFECT FUGITIVE DUST. 3. PLAN THE NECESSARY FIELD STUDIES. 4. ESTIMATE THE COST OF A FULL SCALE FIELD EFFORT.

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00000737

PROJECT TITLE

THE SYNTHESIS OF INFORMATION TO DEVELOP GUIDELINES FOR MANAGING STRIP MINE WATER IMPOUNDMENTS

PROJECT NUMBER

820

INVESTIGATORS

ARDELL J. BJUGSTAD / FRANCIS J. BARNEY / CLIFFORD L. HAWKES

RESEARCH INSTITUTION

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD 57701

PRIMARY SPONSOR

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION

PRIMARY FUNDING AMOUNT

1975 - 34,000 / 1976 - 34,000 / 1977 - 33,500

TIME FRAME

JUNE 1975 TO JUNE 1977

LOCATION

SD ND WY

ABSTRACT

OBJECTIVES: 1. MAKE A COMPREHENSIVE SEARCH OF EXISTING LITERATURE PERTAINING TO WATER QUALITY IN COAL STRIP MINED PITS. 2. INTERPRET THAT INFORMATION TO ESTABLISH WATER QUALITY LIMITS AND GUIDELINES FOR WATER BODIES IN STRIP MINED AREAS SO AS TO ASSURE ADEQUATE HABITAT FOR AQUATIC ORGANISMS AND WILDLIFE ASSOCIATED WITH THOSE WATER BODIES.

METHODS: LITERATURE WILL BE ACCUMULATED AND REVIEWED BY HAND BUT MUCH USE WILL BE MADE OF THE MANY COMPUTER-BASED BIBLIOGRAPHIC RETRIEVAL SYSTEMS E.G. BIOSIS, CAIN, SSIE, LOCKHEED, AND WRSIC. BIBLIOGRAPHIES BY CATE-

GORY WILL BE PREPARED AS WELL AS PUBLICATIONS OF GUIDELINES.

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00000738

PROJECT TITLE
INVERTEBRATE SPECIES, ABUNDANCE AND STANDING CROP BIOMASS IN STRIP MINE PONDS COMPARED TO STOCK PONDS IN THE NORTHERN GREAT PLAINS

PROJECT NUMBER
RC-819

INVESTIGATORS
CLIFFORD L. HAWKES / MARY ELLEN DIX

RESEARCH INSTITUTION
U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD 57701

PRIMARY SPONSOR
U.S. EPA

PRIMARY FUNDING AMOUNT
125,000

TIME FRAME
JUNE 1976 TO JUNE 1979

LOCATION
SD WY ND

ABSTRACT

THIS STUDY WILL ASSESS THE SPECIES, ABUNDANCE AND STANDING CROP BIOMASS OF AQUATIC INVERTEBRATE ORGANISMS IN SELECTED STRIP MINE PONDS AND THE MORE NATURAL STOCK PONDS IN THE NORTHERN GREAT PLAINS. THE OBJECTIVES OF THE STUDY ARE: 1. TO DETERMINE THE SPECIES, ABUNDANCE, AND STANDING CROP BIOMASS OF BENTHIC AND PLANKTONIC AQUATIC INVERTEBRATES AND INVERTEBRATES ASSOCIATED WITH AQUATIC MACROPHYTES FOR SELECTED STRIP MINE AND STOCK PONDS OF THE NORTHERN GREAT PLAINS; 2. TO COMPARE THE DATA ON AQUATIC INVERTEBRATES IN STRIP MINE PONDS WITH THAT OF STOCK PONDS; 3. TO CORRELATE THIS DATA WITH DATA COLLECTED IN STUDIES ON WATER FOWL USE, AQUATIC VEGETATION, WATER CHEMICAL AND PHYSICAL CHARACTERISTICS AND BASIN MORPHOMETRY; 4. TO ESTABLISH THE DETERMINING FACTORS INFLUENCING AQUATIC INVERTEBRATE POPULATIONS IN STRIP MINE AND STOCK PONDS OF THE NORTHERN GREAT PLAINS.

STRIP MINE AND STOCK PONDS FOR THE STUDY ARE LOCATED IN THE HIDDEN WATER CREEK AREA NEAR SHERIDAN, WYOMING; THE COLONY, WYOMING AREA; THE GASCOYNE, NORTH DAKOTA AREA; THE FIRESTEEL, SOUTH DAKOTA AREA; AND THE BEULAH, NORTH DAKOTA AREA. PONDS RANGE FROM 1 TO 35 YEARS IN AGE AND IN SIZE FROM 2 TO 5 ACRES IN SURFACE AREA. SAMPLES WILL BE TAKEN ONCE IN THE SPRING, ONCE IN MIDSUMMER, AND ONCE IN THE FALL. BENTHIC ORGANISMS WILL BE SAMPLED WITH A 5 CM. DIAMETER K-B CORER. VERTICAL HAUL, PLANKTON SAMPLES WILL BE TAKEN WITH A 30 CM. DIAMETER, 70 MICRON MESH PLANKTON NET.

SAMPLING POINTS WILL BE SELECTED RANDOMLY. ALL ORGANISMS WILL BE PRESERVED IN A 20% FORMALIN SOLUTION, SORTED, CLASSIFIED, COUNTED, AND WEIGHED FOR FURTHER ANALYSIS. DATA FROM THIS STUDY ALONG WITH DATA FROM THE OTHER STUDIES BEING CONDUCTED ON THESE SAME PONDS WILL BE ANALYZED USING COMPONENT, FACTOR, AND MULTIVARIATE ANALYSES, AND OTHER TECHNIQUES OF ANALYSIS DEEMED NECESSARY DURING PROCESSING OF THE DATA.

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00000739

PROJECT TITLE
WATER QUALITY IN STRIP MINE PONDS COMPARED TO STOCK PONDS IN THE NORTHERN GREAT PLAINS

PROJECT NUMBER
RC-822

INVESTIGATORS
CLIFFORD L. HAWKES

RESEARCH INSTITUTION
U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD

PRIMARY SPONSOR
U.S. EPA

PRIMARY FUNDING AMOUNT
130,000

TIME FRAME
JUNE 1976 TO JUNE 1979

LOCATION
ND SD WY

ABSTPACT

THIS STUDY WILL INVESTIGATE THE WATER CHEMICAL AND PHYSICAL CHARACTERISTICS OF SELECTED STRIP MINE AND STOCK PONDS IN THE NOTHERN GREAT PLAINS. THE OBJECTIVES OF THIS STUDY ARE: 1. TO DETERMINE THE FOLLOWING PHYSICAL CHARACTERISTICS OF STRIP MINE AND STOCK POND WATER: A) TEMPERATURE PROFILE; B) SECCHI DISC VALUE; C)SPECIFIC CONDUCTANCE; 2. TO DETERMINE THE FOLLOWING CHEMICAL CHARACTERISTICS OF STRIP MINE AND STOCK POND WATER: A)PH; B) ALKALINITY; C) CO2; D) NA, K, MG, CA, SO4, CL, FE; E) TOTAL DISSOLVED SOLIDS; F) DISSOLVED OXYGEN; G) ORTHO-PHOSPHATE AND TOTAL PHOSPHATE; H) NITRATE AND TOTAL NITROGEN; 3. TO COMPARE THE WATER QUALITY OF STRIP MINE PONDS TO THAT OF STOCK PONDS; 4. TO CORRELATE THIS DATA WITH DATA COLLECTED IN THE STUDIES ON WATERFOWL USE, AQUATIC INVERTEBRATES, AQUATIC VEGETATION, AND BASIN MORPHOMETRY.

STRIP MINE AND STOCK PONDS FOR THIS STUDY ARE LOCATED IN THE HIDDEN WATER CREEK AREA NEAR SHERIDAN, WYOMING; THE COLONY, WYOMING AREA; THE GASCOYNE, NORTH DAKOTA

AREA; THE BEULAH, NORTH DAKOTA AREA; AND THE FIRESTEEL, SOUTH DAKOTA AREA. PONDS RANGE FROM 1 TO 35 YEARS IN AGE AND FROM 2 TO 5 ACRES IN SURFACE AREA. SAMPLES AND MEASUREMENTS WILL BE TAKEN ONCE IN THE SPRING, ONCE IN MIDSUMMER, AND ONCE IN THE FALL. SAMPLING POINTS ARE SELECTED RANDOMLY.

THE METHODS TO BE USED ARE AS FOLLOWS: 1. SECCHI DISC; 2. TEMPERATURE: ELECTRONIC PROBE; 3. PH: ELECTRONIC PROBE; 4. DISSOLVED OXYGEN: ELECTRONIC PROBE; 5. SPECIFIC CONDUCTANCE: ELECTRONIC PROBE; 6. ALKALINITY: TITRATION WITH PH; 7. CO2: BY CALCULATION; 8. NA: FLAME EMISSION; 9. K: ATOMIC ABSORPTION; 10. MG: ATOMIC ABSORPTION; 11. CA: ATOMIC ABSORPTION; 12. FE: ATOMIC ABSORPTION: 13. SO4: TURBIDIMETRIC METHOD, PRECIPITATION WITH BARIUM CHLORIDE; 14. CL: POTENTIOMETRIC METHOD, TITRATION WITH SILVER NITRATE; 15. ORTHO PHOSPHATE: ASCORBIC ACID METHOD, COLORIMETRIC; 16. TOTAL PHOSPHATE: PERSULFATE DIGESTION METHOD FOLLOWED BY ASCORBIC ACID, COLORIMETRIC; 17. TOTAL NITROGEN: KJELDAHL DIGESTION METHOD, COLORIMETRIC; 18. NITRATE: CADMIUM REDUCTION METHOD, COLORIMETRIC.

DATA FROM THIS STUDY ALONG WITH DATA FROM THE OTHER STUDIES BEING CONDUCTED ON THESE PONDS WILL BE ANALYZED USING COMPONENT, FACTOR, AND MULTIVARIATE ANALYSES AND OTHER TECHNIQUES OF ANALYSIS AS DEEMED NECESSARY DURING PROCESSING OF THE DATA.

ONE SAMPLING CYCLE WAS CONDUCTED DURING THE SUMMER OF 1976. THREE SAMPLING CYCLES EACH SUMMER WILL BE CONDUCTED DURING 1977 AND 1978.

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00000740

PROJECT TITLE

BASIN MORPHOMETRY OF STRIP MINE PONDS COMPARED TO STOCK PONDS IN THE NORTHERN GREAT PLAINS

PROJECT NUMBER

RC-821

INVESTIGATORS

CLIFFORD L. HAWKES

RESEARCH INSTITUTION

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANCH EXP. STATION
RAPID CITY, SD

PRIMARY SPONSOR

U.S. EPA

PRIMARY FUNDING AMOUNT

30,000
SURFACE MINING

LOCATION

ND WY

ABSTRACT

POND BASIN SHAPE BOTH ABOVE AND BELOW WATER LEVEL WILL BE DETERMINED FOR SELECTED STRIP MINE AND STOCK PONDS IN THE NORTHERN GREAT PLAINS. THE OBJECTIVES OF THIS STUDY ARE: 1. TO PREPARE A BATHYMETRIC MAP OF EACH POND; 2. TO DETERMINE FROM THE BATHYMETRIC MAPS THE FOLLOWING: A) MAXIMUM DEPTH; B) MEAN DEPTH; C) AREA OF POND; D) PERCENTAGE OF POND AREA REPRESENTED BY EACH DEPTH INTERVAL; E) SHORELINE DEVELOPMENT; F) LENGTH OF SHORELINE; G) WATER LEVEL; 3. TO DETERMINE MEAN NEAR-SHORE SLOPES ABOVE WATER LEVEL FOR EACH POND; 4. TO COMPARE THE DATA ON BASIN MORPHOMETRY OF STRIP MINE PONDS WITH THAT OF STOCK PONDS; 5. TO CORRELATE THIS DATA WITH DATA COLLECTED IN THE OTHER STUDIES ON WATERFOWL USE, AQUATIC VEGETATION, AQUATIC INVERTEBRATES, AND WATER CHEMICAL AND PHYSICAL CHARACTERISTICS.

STRIP MINE AND STOCK PONDS FOR THIS STUDY ARE LOCATED IN THE HIDDEN WATER CREEK AREA NEAR SHERIDAN, WYOMING; THE COLONY, WYOMING AREA; THE GASCOYNE, NORTH DAKOTA AREA; THE FIRESTEEL, SOUTH DAKOTA AREA; AND THE BEULAH, NORTH DAKOTA AREA. PONDS RANGE FROM 1 TO 35 YEARS IN AGE AND IN SIZE FROM 2 TO 5 ACRES IN SURFACE AREA. BATHYMETRIC MAPS WILL BE PREPARED USING RECENT, 1:12,000 SCALE AERIAL PHOTOGRAPHS FOR THE SHORE-LINE MAPPING AND STADIA SURVEYS WITH LEAD SOUNDINGS FOR DEPTH MAPPING. MEAN NEAR-SHORE SLOPES ABOVE WATER LEVEL WILL BE MEASURED EVERY 50 FEET AROUND THE PERIMETER OF EACH POND. AT EACH MEASUREMENT POINT TWO READINGS WILL BE TAKEN OVER OVER A 25 FOOT DISTANCE: ONE FROM THE WATER'S EDGE AND ONE FROM A POINT 50 FEET FROM THE WATER'S EDGE.

THE DATA FROM THIS STUDY ALONG WITH DATA FROM THE OTHER STUDIES BEING CONDUCTED ON THESE PONDS WILL BE ANALYZED USING COMPONENT, FACTOR, AND MULTI-VARIATE ANALYSES AND OTHER TECHNIQUES OF ANALYSIS DEEMED NECESSARY DURING PROCESSING OF THE DATA. WORK ON THE STUDY BEGAN DURING THE SUMMER OF 1976 AND WILL CONTINUE THROUGH JUNE OF 1979.

RESOURCE AND FUGITIVE DUST

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00000741

PROJECT NUMBER

H381-87

INVESTIGATORS

ALFRED A. SCHEER / DR. JOE ARMIJO (MONTANA STATE UNIV., DEPT. OF CIVIL ENG.) / DR. EDWARD BURROUGHS (U.S. FOREST SERVICE, IF&RES)

RESEARCH INSTITUTION

U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
FORESTRY SCIENCES LAB / BOX 1376 / BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. EPA, CINCINNATI NAT. ENV. RESEARCH CENTER

RON HILL / CINCINNATI, OH 45268

PRIMARY FUNDING AMOUNT

FY 76 - 24,400 / FY 77 - 100,600

TIME FRAME

JUNE 1976 TO JUNE 1978

LOCATION

WESTERN COAL REGION - MT ND WY SD ID

ABSTRACT

DEVELOP MATHEMATICAL EXPRESSIONS TO CALCULATE QUANTITATIVE ESTIMATES OF THE IMPACTS ON THE WATER RESOURCE PORTATION SYSTEM AND THE CORRIDOR ENVIRONMENT. SPECIFIC IMPACTS TO BE STUDIES ARE: 1. WATER POLLUTING EMISSIONS AND DISCHARGES (SEDIMENT, CHEMICALS, SALTS, AND WATER TEMPERATURE EFFECTS). 2. HYDROLOGIC CHARGES PRODUCED BY THE TRANSPORTATION SYSTEM INDEPENDENT OF WATER QUALITY (STREAMFLOW PEAKS, CHANNEL SCOUR, ETC.) 3. FUGITIVE DUST AS A RESULT OF ENTRAINMENT OF PARTICLES BY WIND BLOWING ACROSS THE ROAD SURFACE AND CUT-AND-FILL SURFACES.

REPORTS AND PUBLICATIONS

J. D. ARMIJO, E. S. SANDBERG, A. C. SCHEER, AND A. D. TRAEHOLT. INTERIM REPORT ON ENVIRONMENTAL EFFECTS OF HAUL ROADS. MONTANA STATE UNIVERSITY, DEPT. OF CIVIL ENG. AND ENGINEERING MECHANICS, BOZEMAN, MONTANA 59715. JULY, 1976.

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00000742

PROJECT TITLE

CHARACTERISTICS AND POTENTIAL IMPACT OF WASTEWATERS FROM A COAL FIRED POWER PLANT AT COLSTRIP, MONTANA

INVESTIGATORS

M. K. BOTZ

RESEARCH INSTITUTION

MONTANA WATER QUALITY BUREAU
HELENA, MT 59601

PRIMARY SPONSOR

U.S. EPA

SECONDARY SPONSOR(S)

MONTANA WATER QUALITY BUREAU

PRIMARY FUNDING AMOUNT

18,160

SECONDARY FUNDING AMOUNT(S)

956

TIME FRAME

OCT. 1976 TO DEC. 1977

ABSTRACT

PROJECT WILL DETERMINE CHEMICAL-PHYSICAL NATURE OF WASTEWATERS FROM COLSTRIP POWER PLANT. CONTAINMENT OF THESE WASTES WILL BE EXAMINED AND POTENTIAL IMPACT OF THESE WASTES ON HYDROLOGIC SYSTEMS WILL BE EVALUATED. (MEAC)

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00000743

PROJECT TITLE

MONTANA STATE WATER PLAN

INVESTIGATORS

JOHN E. ACORD

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
RESOURCES & PLANNING BUREAU / HELENA, MT 59601

COOPERATOR

WESTERN STATES WATER COUNCIL
MISSOURI RIVER BASIN COMMISSION
INTERSTATE CONFERENCE ON WATER PROBLEMS
U.S. CORPS OF ENGINEERS
PACIFIC NORTHWEST RIVER BASINS COMMISSION

PRIMARY SPONSOR

MONTANA STATE GOVERNMENT

SECONDARY SPONSOR(S)

U.S. WATER RESOURCES COUNCIL

PRIMARY FUNDING AMOUNT

FY 77 - 307,341

SECONDARY FUNDING AMOUNT(S)

FY 77 - 107,748

TIME FRAME

JULY 1967 TO CONTINUING

ABSTRACT

DEVELOPMENT OF A COMPREHENSIVE, COORDINATED MULTIPLE-USE WATER AND RELATED LAND RESOURCES PLAN FOR THE STATE REQUIRES CONSIDERATION OF ALL BENEFICIAL USES OF WATER, INCLUDING WATER FOR ENERGY PRODUCTION. CURRENT PLANNING EFFORTS ARE CONCENTRATED IN THE YELLOWSTONE RIVER BASIN, WHERE LARGE AMOUNTS OF WATER TO BE USED IN ENERGY PRODUCTION HAVE BEEN APPLIED FOR, AND, IF PERMITTED, COULD SERIOUSLY IMPACT OTHER WATER USES.

OTHER ENERGY RELATED WATER PLANNING EFFORTS ARE MORE REGIONAL AND INVOLVE COOPERATION WITH: THE CORPS OF ENGINEERS IN EVALUATING HYDROPOWER AND PUMPED STORGAGE POTENTIAL; THE PACIFIC NORTHWEST RIVER BASINS COMMISSION AND THE MISSOURI RIVER BASIN COMMISSION IN DEVELOPING COMPREHENSIVE COORDINATED JOINT PLANS AND THE NATIONAL ASSESSMENT; THE WESTERN STATES WATER COUNCIL IN DETERMINING WATER REQUIREMENTS FOR ENERGY IN THE ELEVEN WESTERN STATES; AND THE INTERSTATE CONFERENCE ON WATER PROBLEMS IN SUGGESTING GUIDELINES FOR NATIONAL ASSESSMENT OF WATER FOR ENERGY UNDER SECTION 13 OF P.L. 93-577. (MEAC)

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00000744
PROJECT TITLE
DETERMINATION OF EXISTING RIGHTS, POWDER RIVER BASIN, MONTANA
INVESTIGATORS
RALPH SAUNDERS
RESEARCH INSTITUTION
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
WATER RIGHTS BUREAU / HELENA, MT 59601
PRIMARY SPONSOR
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, WATER RIGHTS BUREAU
PRIMARY FUNDING AMOUNT
1977 - 161,000
TIME FRAME
JULY 1973 TO CONTINUING
ABSTRACT

IT WAS DECIDED THAT THE INITIAL DETERMINATION OF EXISTING WATER RIGHTS PURSUANT TO THE MONTANA WATER USE ACT WOULD BE WITHIN THE YELLOWSTONE RIVER BASIN BECAUSE OF MONTANA'S LACK OF DOCUMENTATION CONCERNING VALID WATER USE, WATER-SUPPLY PROBLEMS, AND IMPLICATIONS OF INDUSTRIAL APPLICATION. THE DETERMINATION OF EXISTING RIGHTS INVOLVES FIELD INVESTIGATIONS BY STAFF OF THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, A SEARCH OF ALL RECORDS OF WATER RIGHTS AND USE, COLLECTION OF DECLARATIONS FROM CLAIMANTS OF WATER RIGHTS, RECOMMENDATIONS TO THE COURT BY THE DNRC STAFF, COURT ISSUANCE OF A PRELIMINARY DECREE, AND FINAL DECREE AFTER HEARINGS, IF NECESSARY. FINAL PREPARATIONS ARE BEING MADE FOR RECOMMENDATIONS TO THE COURT ON ABOUT 1,000 TO 1,100 WATER RIGHTS REPRESENTING ABOUT 6% OF THE LAND AREA OF THE POWDER RIVER BASIN. THESE RIGHTS RECOMMENDED REPRESENT ALL THE IRRIGATION, STOCK, DOMESTIC, AND OTHER WATER RIGHTS ESTABLISHED ON THE EAST FORK OF THE LITTLE POWDER RIVER, HAY CREEK, AND ASH CREEK. IT IS ESTIMATED THAT THERE WILL BE EVENTUALLY A TOTAL OF 9,000 WATER RIGHTS IN THE BASIN RECOMMENDED TO THE DISTRICT COURT. ALL INDICATIONS SO FAR -- ABOUT HALF OF THOSE RIGHTS -- WILL HAVE BEEN ESTABLISHED BY USE. (MERPO)

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00000745
PROJECT TITLE
STREAM CLASSIFICATION
INVESTIGATORS
GEORGE D. HOLTON
RESEARCH INSTITUTION
MONTANA DEPT. OF FISH AND GAME
HELENA, MT 59601
PRIMARY SPONSOR
U.S. FISH AND WILDLIFE SERV.
PRIMARY FUNDING AMOUNT
9,995
TIME FRAME
DEC. 1976 TO JUNE 1977
LOCATION
MT
ABSTRACT

THIS PROGRAM WILL CONSIST OF ESTABLISHING CRITERIA FOR CLASSIFYING STREAMS INTO FOUR CLASSES DEPICTING THEIR FISHERY VALUE. DATA RELATING TO THESE CRITERIA WILL BE DOCUMENTED FOR EACH OF THE ESTIMATED 1,000 TO 1,500 STREAM REACHES IN THE YELLOWSTONE RIVER DRAINAGE. AS THERE WILL NOT BE TIME FOR FIELD INVESTIGATIONS OF STREAMS, THE DATA FOR EVALUATION WILL HAVE TO BE DERIVED FROM DEPARTMENT FILES IN HELENA AND FIELD OFFICES AND FROM CONSULTATION WITH FISHERIES WORKERS FAMILIAR WITH THE WATERS. THE VALUE CLASSIFICATION OF EACH REACH WILL BE DETERMINED FROM AN EVALUATION CRITERIA MATRIX. IN ADDITION THE VALUE CLASSIFICATION FOR EACH STREAM REACH WILL BE ENCODED ON U.S. GEOLOGICAL SURVEY 1:250,000 MAPS. (MEAC)

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00000746
PROJECT TITLE
TONGUE RIVER BASIN AREA WATER SUPPLY PROJECT
INVESTIGATORS
F. J. TRELEASE
RESEARCH INSTITUTION
WYOMING GOVERNOR'S INTERDEPARTMENTAL WATER CONFERENCE
CHEYENNE, WY 82002
PRIMARY SPONSOR
WYOMING GOVERNOR'S INTERDEPARTMENTAL WATER CONFERENCE
PRIMARY FUNDING AMOUNT
46,000
TIME FRAME
NOV. 1976 TO JAN. 1977
LOCATION
MT WY
ABSTRACT

THE TONGUE RIVER HAS A SIZEABLE WATER SUPPLY AVAILABLE FOR DEVELOPMENT. THE STATE NEEDS TO DERIVE WATER MANAGEMENT GOALS FOR THE USE OF THIS WATER. WATER COULD BE IMPORTED INTO THE TONGUE RIVER BASIN FROM THE LITTLE BIGHORN RIVER, WHICH IS NOT INCLUDED IN THE YELLOWSTONE RIVER COMPACT. BOTH TONGUE RIVER AND LITTLE

BIGHORN RIVER ARE INVOLVED IN MONTANA LITIGATION CONCERNING INDIAN AND FEDERAL RESERVED WATER RIGHTS, AND WYOMING NEEDS TO PROTECT ITS INTERESTS. THERE NEEDS TO BE AN ANALYSIS OF THE POSSIBILITITES OF MEETING OTHER WATER NEEDS AT THE SAME TIME INDUSTIRAL WATER SUPPLY IS DEVELOPED.

THERE IS AN URGENCY TO DEVELOP IDEAS ON ALTERNATIVE WATER MANAGEMENT GOALS AS DEFINED IN THE WYOMING WATER DEVELOPMENT ACT AND ON AT LEAST RELATIVE ENGINEERING, ECONOMIC, AND ENVIRONMENTAL ASPECTS OF ALTERNATIVE FUTURE WATER DEVELOPMENTS.

BY JANUARY 31, 1977 A STUDY WILL BE COMPLETED IN WHICH WATER DEVELOPMENT STRATEGIES WILL BE INVESTIGATED, FOLLOWING A STATE-DEVISED OUTLINE INCLUDING: 1. A PRELIMINARY DETERMINATION OF ALTERNATIVE WATER MANAGEMENT GOALS AND WATER DEVELOPMENT STRATEGIES, 2. A COMPARISON OF PRIVATE PROPOSALS WITH WATER MANAGEMENT GOALS, AND 3. A DETERMINATION OF THE DESIRABILITY OF STATE INVOLVEMENT IN THE AREA'S WATER RESOURCE DEVELOPMENT.

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00000747

PROJECT TITLE
LIGNITE LIQUEFACTION WASTE WATER - SUITABILITY OF REUSE AND CLEAN UP FOR DISCHARGE INTO THE ENVIRONMENT

PROJECT NUMBER
C-71B8

INVESTIGATORS
R. J. BALTISBERGER / D. E. BARTAK / N. F. WOOLSEY / V. I. STENBERG

RESEARCH INSTITUTION
UNIV. OF NORTH DAKOTA, DEPT. OF CHEMISTRY
UNIVERSITY STATION / GRAND FORKS, ND 58201

PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR, OFFICE OF WATER RESEARCH

PRIMARY FUNDING AMOUNT
14,674

LOCATION
ND

ABSTRACT
THE RESEARCH PLAN INVOLVES LABORATORY INVESTIGATIONS DIRECTED AT THE DETERMINATION OF ORGANIC AND INORGANIC CONTAMINANTS GENERATED IN THE WASTE WATER EFFLUENTS OF A LIGNITE LIQUEFACTION PILOT PLANT. METHODS WILL BE INVESTIGATED FOR THE CLEAN UP OR REUSE OF THE WASTE WATER.

LABORATORY INVESTIGATIONS WOULD EMPLOY: 1. EXTRACTION AND CONCENTRATION OF THE ORGANIC CONTAMINANTS. 2. GAS OR LIQUID CHROMATOGRAPHIC SEPARATION OF THE ORGANICS, FOLLOWED BY UV OR MASS SPECTRAL ANALYSIS. 3. MEASUREMENT OF THE INORGANIC CONTAMINANTS BY ELECTROCHEMICAL OR ATOMIC ABSORPTION TECHNIQUES. 4. WATER SOLUBILITY STUDIES OF SOLID WASTE. 5. ABSORPTION STUDIES USING ACTIVATED CARBON, LIGNITE OR RESIN FOR REMOVAL OF CONTAMINANTS.

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00000748

PROJECT TITLE
RESEARCH INITIATION - TREATABILITY STUDIES OF WASTEWATERS FROM LIGNITE COAL GASIFICATION

PROJECT NUMBER
ENG75-10251

INVESTIGATORS
S. L. KLEMETSON

RESEARCH INSTITUTION
NORTH DAKOTA STATE UNIV., DEPT. OF CIVIL ENGINEERING
FARGO, ND 58102

PRIMARY FUNDING AMOUNT
17,500

TIME FRAME
MAR. 1976 TO FEB. 1977

LOCATION
ND

ABSTRACT
THE PROPOSED RESEARCH PROJECTS WILL INVESTIGATE THE TYPES OF WASTE THAT WILL BE GENERATED BY THE COAL GASIFICATION PROCESS IN ORDER TO PROVIDE THE KNOWLEDGE THAT WILL BE NECESSARY FOR PREDICTING THEIR ENVIRONMENTAL IMPACT AND FOR DEVISING WAYS OF CONTROLLING IT. THE PROJECT WILL INVOLVE COLLECTION AND ANALYSIS OF DATA ON THE WASTE WATER STREAMS FROM THE DRY ASH LURGI PRESSURE GASIFICATION PROCESS FOR PROCESSING NORTH DAKOTA LIGNITE COAL. THE CHEMICAL AND BIOLOGICAL TREATABILITY OF THESE WASTES WILL BE DETERMINED, AND A SUITABLE TREATMENT PROCESS WILL BE SELECTED FOR A LABORATORY TREATABILITY STUDY UNDER CONTROLLED COLD WEATHER CONDITIONS.

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00000749

PROJECT TITLE
DEVELOPMENT OF INSTRUMENTATION AND TECHNIQUES FOR MEASURING SEDIMENT LADEN STREAM

PROJECT NUMBER
IAG-D5-E778-8X-02

INVESTIGATORS
A. G. SCOTT

RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV.

12201 SUNRISE VALLEY DR. / HERNDON, VA 22092
PRIMARY SPONSOR
U.S. EPA, OFFICE OF RESEARCH & DEV.
PRIMARY FUNDING AMOUNT
195,000
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY CO KY
ABSTRACT

OBJECTIVE: TO DEVELOP, TEST, AND FIELD EVALUATE FLUMES, WEIRS, AND OTHER DEVICES AND MEANS SUITABLE FOR MEASURING SEDIMENT AND DEBRIS LADEN FLOWS; TO DEVELOP AN IN-SITU INSTRUMENTATION SYSTEM CAPABLE OF MEASURING THE MASS CONCENTRATION OF SEDIMENT IN WATER; TO DEVELOP AN ACCEPTABLE SAMPLER(S) FOR MEASURING THE DISCHARGE OF BEDLOAD SEDIMENT PARTICLES SO AS TO PERMIT THE EFFECTS OF ENERGY DEVELOPMENT, PARTICULARLY MINING ACTIVITIES, ON STREAMS TO BE MONITORED.

APPROACH: FLUMES, WEIRS, AND OTHER TYPES OF CONTROL STRUCTURES ARE BEING DEVELOPED, TESTED, AND FIELD EVALUATED IN THE AREAS OF OIL SHALE AND COAL MINING. PHOTOGRAPHIC TECHNIQUES ARE BEING INVESTIGATED. A LITERATURE SEARCH WILL BE MADE OF COMMERCIALLY AVAILABLE SUSPENDED SOLIDS SENSORS COMPATIBLE WITH THE OBJECTIVE. ONE OR TWO INSTRUMENTS WILL BE SELECTED FOR COMPREHENSIVE LABORATORY TESTS. AN AUTOMATIC SAMPLING AND DATA LOGGING SYSTEM TO OPERATE IN CONJUNCTION WITH THE OPTIMUM SENSOR WILL THEN BE DESIGNED. THE COMPLETE PACKAGE WILL BE TESTED FIRST UNDER SIMULATED FIELD CONDITIONS. PROMISING DIRECT-MEASURING BEDLOAD SAMPLERS WILL BE CALIBRATED TO DEFINE THEIR EFFICIENCIES UNDER VARIOUS CONDITIONS. THE EFFECTS OF SUCH THINGS AS PARTICLE SIZE, TRANSPORT RATE, BED FORM, HYDRAULIC CONDITION, SAMPLER ORIENTATION, AND DEGREE OF FILLING ON SAMPLER EFFICIENCY WILL BE ASCERTAINED. APPROPRIATE SAMPLERS WILL BE MODIFIED AND/OR NEW SAMPLERS DEVELOPED AND SUBSEQUENTLY TESTED AND CALIBRATED TO PROVIDE IMPROVED OPERATION.

PROGRESS: EXPERIMENTAL WEIRS AND FLUMES HAVE BEEN INSTALLED ON THE BELLE FOUCHE RIVER IN WYOMING, ON PICEANCE CREEK IN COLORADO, AND ON A TRIBUTARY OF THE NORTH FORK OF THE KENTUCKY RIVER, KENTUCKY. THE STATE OF THE ART IN PHOTOGRAPHIC TECHNIQUES THAT MIGHT BE APPLIED TO THE PROBLEM OF FLOW MEASUREMENT IS BEING ASSESSED. ALTHOUGH THE EQUIPMENT SURVEY IS ONLY PARTIALLY COMPLETE, A DYNATROL DENSITY GAGE IS BEING TESTED. ONE OF THE BEDLOAD SAMPLERS OF PRIMARY INTEREST IS THE HELLEY SMITH SAMPLER, WHICH IS PRESSURE-DIFFERENCE TYPE SAMPLER THAT HAS BEEN USED RECENTLY BY SEVERAL INVESTIGATORS.

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00000750
PROJECT TITLE
SURFACE WATER QUALITY MONITORING PROGRAM IN CANADIAN COAL DEVELOPMENT IMPACT AREAS
INVESTIGATORS
GEORGE M. PIKE
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV. / BOX 1696 / HELENA, MT 59601
PRIMARY SPONSOR
U.S. EPA, REGION VIII / LES SPRENGER / 1860 LINCOLN ST / DENVER, CO 80203
PRIMARY FUNDING AMOUNT
18,000
TIME FRAME
APR. 1976 TO CONTINUING
LOCATION
MT
ABSTRACT

THE USGS, WRD, MONTANA DISTRICT OFFICE WILL COLLECT AND ANALYZE SURFACE WATER QUALITY DATA AT THE SIX STATIONS LISTED: 1. MIDDLE FORK POPLAR RIVER NEAR SCOBEY; 2. EAST FORK POPLAR RIVER NEAR SCOBEY; 3. MIDDLE FORK POPLAR RIVER AT THE INTERNATIONAL BOUNDARY; 4. WEST FORK POPLAR RIVER AT THE INTERNATIONAL BOUNDARY; 5. WEST FORK POPLAR RIVER NEAR BREDETTE; 6. POPLAR RIVER ABOVE WEST FORK. FOR THE PARAMETERS OF:

PARAMETER GROUP	SPECIFIC PARAMETERS
FIELD	STREAMFLOW, PH, TEMPERATURE, TURBIDITY, DISSOLVED OXYGEN AND SPECIFIC CONDUCTANCE
CHEMICAL	CALCIUM, MAGNESIUM, SODIUM, POTASSIUM, BICARBONATE, CARBONATE, SULFATE, CHLORIDE, FLUORIDE, BORON, SILICA, AND IRON
NUTRIENTS	TOTAL NITRITE AND NITRATE, TOTAL PHOSPHORUS, TOTAL KJELDAHL, NITROGEN, AND TOTAL AMMONIA.
METALS	DISSOLVED (ALLUMINUM, ARSENIC, BERYLLIUM, CADMIUM, CHROMIUM, COPPER, LEAD, MERCURY, MAGANESE, NICKEL, AND ZINC).

THERE ARE OTHER SURFACE WATER QUANTITY AND QUALITY STATIONS IN THE AREA AND THIS PROJECT IS PART OF THE OVERALL SAMPLING NETWORK.

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00000751

PROJECT TITLE

GROUNDWATER RESEARCH MONITORING OF ENERGY RELATED DEVELOPMENTS

PROJECT NUMBER

625C/ABH

INVESTIGATORS

DR. RICHARD TINLIN

RESEARCH INSTITUTION

GENERAL ELECTRIC-TEMPO / P.O. DRAWER QQ / SANTA BARBARA, CA 9310

PRIMARY SPONSOR

U.S. EPA, ENVIRONMENTAL MONITORING & SUPPORT LAB.
LESLIE G. MCMILLION / P.O. BOX 15027 / LAS VEGAS, NV 89114

PRIMARY FUNDING AMOUNT

225,000

TIME FRAME

OCT. 1976 TO JUNE 1981

LOCATION

WY UT

ABSTRACT

OBJECTIVE: DEVELOPMENT OF A GROUNDWATER MONITORING MODEL AND STRATEGY THAT WILL BE APPLICABLE TO ANY STRIP COAL MINING AND OIL SHALE MINING AND PROCESSING AREA.

APPROACH: TWO GROUNDWATER BASINS WILL BE INTENSIVELY STUDIED BY APPLYING A THEORETICALLY DEVELOPED MONITORING STRATEGY AND THE RESULTS DEVELOPED INTO A GUIDELINE FOR MONITORING GROUNDWATER QUALITY IN EACH OF THE ABOVE AREAS. APPROXIMATELY 60% OF THE EFFORT WILL COVER GROUNDWATER IN THE STRIP COAL MINING AREA ON THE EAST FLANK OF THE POWDER RIVER BASIN WHERE THERE IS MINE-MOUTH POWER GENERATION AND RAILROAD EXPORT AND THERE ARE PROPOSED COAL GASIFICATION AND LIQUEFACTION PROJECTS AS WELL AS A PIPELINE SLURRY PROPOSAL.

THE REMAINING 40% OF THE EFFORT WILL BE IN THE UINTAH BASIN, UTAH AROUND TRACTS UA AND UB WHERE THERE IS A PROPOSED MINING AND PROCESSING PROJECT.

CURRENT PLANS: A CONTRACT WITH GE-TEMPO HAS BEEN EXECUTED AND BASELINE DATA COVERING IDENTIFICATION OF ALL ONGOING MONITORING AND RELEVANT GROUNDWATER INFORMATION IS ONGOING. A MONITORING STRATEGY IS EXPECTED ABOUT 6/77 WITH IMMEDIATE IMPLEMENTATION.

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00000752

PROJECT TITLE

SURFACE WATER QUALITY MONITORING IN THE YELLOWSTONE RIVER AND ITS TRIBUTARIES IN NORTHERN GREAT PLAINS COAL REGION OF EASTERN MONTANA

INVESTIGATORS

GRADY L. MOORE / GEORGE M. PIKE

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV. / P.O. BOX 1696
HELENA, MT 59601

PRIMARY SPONSOR

U.S. EPA

PRIMARY FUNDING AMOUNT

34,000

TIME FRAME

APR. 1974 TO CONTINUING

LOCATION

MT

ABSTRACT

OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO CONTINUE THE SURFACE WATER QUALITY MONITORING PROGRAM ESTABLISHED WITH THE USGS IN 1974. DUE TO VARIATION IN CLIMATIC CONDITIONS, IT IS NECESSARY TO CONTINUE THE MONITORING EFFORT FOR A PERIOD OF YEARS TO ESTABLISH REPRESENTATIVE BASELINE CONDITIONS. THIS IS ACCOMPLISHED IN PART BY THE CONTINUATION OF THE PREVIOUSLY ESTABLISHED 8-STATION MONITORING NETWORK TO PROVIDE A MORE OBJECTIVE BASIS FOR EVALUATING THE POSSIBLE IMPACTS OF ENERGY DEVELOPMENT ACTIVITIES ON SURFACE WATER QUALITY IN THE YELLOWSTONE RIVER COAL REGION OF EASTERN MONTANA. IT SHOULD BE NOTED THAT THERE ARE MANY OTHER WATER QUALITY STATIONS ESTABLISHED IN THE AREA AND THAT THE EPA-USGS PROGRAM IS AN INTEGRAL PART OF THE OVERALL WATER QUALITY SAMPLING NETWORK.

APPROACH: THE USGS WILL BE RESPONSIBLE FOR THE COLLECTION AND ANALYSIS OF SURFACE WATER QUALITY DATA IN ENERGY IMPACTED AREAS OF MONTANA.

PROGRESS: COLLECTION OF THE AGREED UPON DATA IS CONTINUING AT SEVEN STATIONS ON THE YELLOWSTONE RIVER AND A STATION ON THE TONGUE RIVER BELOW HANGING WOMAN CREEK.

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00000753

PROJECT TITLE

MONITORING AND MODELING OF SHALLOW GROUNDWATER SYSTEMS IN THE POWDER RIVER BASIN

PROJECT NUMBER

(BU MINES) J0265050

INVESTIGATORS

MICHAEL A. NAWROCKI

RESEARCH INSTITUTION

HITTMAN ASSOCIATES, INC. / 9190 RED BRANCH ROAD /
COLUMBIA, MD 21045

COOPERATOR

ILLINOIS STATE WATER SURVEY / THOMAS PRICKETT /
P.O. BOX 232 / URBANA, IL 61801

PRIMARY SPONSOR
U.S. BUREAU OF MINES / GARY MCINTUSH / DENVER FEDERAL CENTER BLDG 20 / DENVER, CO 80225

PRIMARY FUNDING AMOUNT
1,497,849

TIME FRAME
JULY 22, 1976 TO JULY 22, 1981

LOCATION
MT WY

ABSTRACT

THIS PROJECT IS DESIGNED TO ASSESS AND PREDICT THE IMPACTS WHICH SURFACE COAL MINING WILL HAVE ON THE REGIONAL SHALLOW GROUNDWATER SYSTEMS IN THE POWDER RIVER BASIN. THE PRIMARY OBJECTIVE WILL BE MET THROUGH THE ACCOMPLISHMENT OF THE FOLLOWING: 1. THE DESIGN AND ESTABLISHMENT OF A REGIONAL NETWORK FOR MONITORING OF SHALLOW GROUNDWATER SYSTEMS IN THE BASIN. 2. MONITORING OF THE DIRECTION AND RATE OF FLOW, WATER QUALITY, AND AQUIFER CHARACTERISTICS OF THE SHALLOW GROUNDWATER SYSTEMS. 3. DEVELOPMENT OF A REGIONAL GROUNDWATER SIMULATION MODEL, WITH APPURTENANT SUBROUTINES TO DETERMINE LOCAL EFFECTS, WHICH IS CAPABLE OF PREDICTING THE IMPACTS OF COAL STRIP MINING ON THE SHALLOW GROUNDWATER SYSTEMS. THE REGIONAL MODEL OF THE SHALLOW GROUNDWATER QUALITY AND QUANTITY WILL BE DEVELOPED BY PRICKETT AND LONNQUIST.

THE PROJECT IS DIVIDED INTO TWO PHASES. DURING PHASE I, WHICH WAS RECENTLY COMPLETED, A LITERATURE SURVEY WAS CONDUCTED TO ACQUIRE THE AVAILABLE DATA AND TO IDENTIFY WHERE ADDITIONAL FIELD DATA IS REQUIRED. THEN, A MONITORING PROGRAM WAS DESIGNED TO GATHER THE NECESSARY DATA FOR DEVELOPMENT OF THE REGIONAL SHALLOW GROUNDWATER MODEL. ALSO DURING PHASE I, THE BASIC PRICKETT-LONNQUIST MODEL WAS SET UP AND RUN FOR THE GENERALIZED CONDITIONS EXISTING IN THE POWDER RIVER BASIN IN ORDER TO TEST OVERALL RESPONSE TIMES, SENSITIVITY OF PARAMETERS, AND GENERAL OPERATION OF THE MODEL. DURING PHASE II, THE MONITORING PROGRAM WILL BE IMPLEMENTED AND THE REGIONAL MODEL WILL BE DEVELOPED, CALIBRATED, AND TESTED USING DATA ACQUIRED FROM THE MONITORING PROGRAM.

REPORTS AND PUBLICATIONS
PHASE I REPORT. COMPLETED JAN., 1977.
ANNUAL REPORTS.
FINAL REPORT. DUE 1981
AVAILABLE FROM U.S. BUREAU OF MINES, DENVER, CO

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00000754

PROJECT TITLE
SHALLOW GROUND-WATER RECONNAISSANCE OF FORT UNION BETWEEN YELLOWSTONE AND MISSOURI RIVERS IN MONTANA

INVESTIGATORS
STEVEN E. SLAGLE

RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV. / 3 N. 7TH ST. WEST / BILLINGS, MT 59101

PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV.
GEORGE M. PIKE / P.O. BOX 1696 / HELENA, MT 59601

PRIMARY FUNDING AMOUNT
16,500

TIME FRAME
APR. 1975 TO APR. 1976

STATUS
FIELD WORK COMPLETED SEPT. 1976.

LOCATION
MT

ABSTRACT

OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO PRODUCE AND CALIBRATE A SIMULATION TECHNIQUE THAT PROJECTS THE IMPACT OF LARGE-SCALE SURFACE MINING OF ENERGY FUELS IN SOUTHEASTERN MONTANA ON THE SHALLOW GROUND-WATER AND SURFACE-WATER SYSTEMS. THE STUDY INVOLVES THE COLLECTION OF PHYSICAL AND CHEMICAL DATA FROM EXISTING WELLS AND FROM SPRINGS AND SEEPS. THE EFFORT WOULD BE DIRECTED AT GEOGRAPHICAL AREAS WHERE COAL IS MOST LIKELY TO BE DEVELOPED, IN THE YELLOWSTONE RIVER BASIN AND THE UPPER MISSOURI RIVER BASIN NEAR THE FORT PECK RESERVOIR.

APPROACH: INITIAL EFFORTS WILL LOCATE EXISTING WELLS IN THE AREA OF EASTERN MONTANA BETWEEN THE YELLOWSTONE AND MISSOURI RIVERS. FIELD EFFORTS WILL THEN INVOLVE FINAL SELECTION OF REPRESENTATIVE WELLS AND SAMPLING. WATER LEVELS WILL BE MEASURED TO DISCOVER GROSS DIFFERENCES IN THE POTENTIOMETRIC SURFACE AND MAPS WILL BE PREPARED SHOWING THIS SURFACE. MODIFIED PUMPING TESTS MAY BE RUN IF PUMPS AND OBSERVATION WELLS ARE AVAILABLE. SAMPLES OF AQUIFER WATER WILL BE COLLECTED AND ANALYZED.

PROGRESS: APPROXIMATELY 5,000 WELL RECORDS FILED WITH THE MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION HAVE BEEN OBTAINED FOR THE COAL RICH AREAS OF MCCONE, RICHLAND, DAWSON, PRAIRIE, AND WIBAUX COUNTIES, MONTANA. ABOUT 800 SELECTED WELLS IN THESE COUNTIES HAVE BEEN INVENTORIED (LOCATION ACCURATELY DETERMINED, DEPTH AND WATER LEVEL MEASURED) AND ABOUT 150 WATER SAMPLES HAVE BEEN COLLECTED FOR CHEMICAL ANALYSES. THE WELL INVENTORY IS COMPLETE IN THE CIRCLE WEST AREA, WHICH IS THE AREA WHERE COAL MINING APPEARS MOST IMMINENT. FIELD WORK IS EXTENDING TO NEARBY AREAS WHERE COAL IS KNOWN TO EXIST.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'EFFECTS OF MINING AND RELATED ACTIVITIES ON THE SHALLOW GROUNDWATER SYSTEM,' U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV., SERIAL NUMBER 00000100, ERIS QUARTERLY REPORTS, VOL. 1, NO. 1, NOVEMBER, 1975.

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00000755
PROJECT TITLE
EVALUATION OF AQUIFERS ASSOCIATED WITH POTENTIAL COAL DEVELOPMENT IN SOUTHEASTERN MONTANA
INVESTIGATORS
WAYNE A. VAN VOAST / MARVIN R. MILLER
RESEARCH INSTITUTION
MONTANA BUREAU OF MINES & GEOLOGY / BUTTE, MT 59701
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV.
SECONDARY SPONSOR(S)
MONTANA STATE GOVERNMENT
PRIMARY FUNDING AMOUNT
55,000
SECONDARY FUNDING AMOUNT(S)
5435
TIME FRAME
JULY 1, 1976 TO JUNE 30, 1977
LOCATION
MT
ABSTRACT
INSTALLATION OF ADDITIONAL RESEARCH WELLS. INTEGRATED WELLS INTO MONITORING PROGRAM. CONDUCTED AQUIFER TESTS FOR TRANSMISSIVITY DATA. RESULTS SERVE TO PROMOTE EFFICIENT DEVELOPMENT OF MONTANA'S COAL AND UNDERGROUND WATER RESOURCES. (MEAC)
STUDY AFFILIATION
THIS PROJECT IS A CONTINUATION OF 'EVALUATION OF AQUIFERS ASSOCIATED WITH POTENTIAL COAL DEVELOPMENT, SOUTHEASTERN MONTANA,' SERIAL NUMBER 00000327, ERIS QUARTERLY REPORT, VOL. 1, NO. 2, FEBRUARY, 1976.

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00000756
PROJECT TITLE
COAL HYDROLOGY
INVESTIGATORS
WAYNE A. VAN VOAST / MARVIN R. MILLER
RESEARCH INSTITUTION
MONTANA BUREAU OF MINES & GEOLOGY / BUTTE, MT 59701
PRIMARY SPONSOR
MONTANA BUREAU OF MINES & GEOLOGY
PRIMARY FUNDING AMOUNT
7,000
TIME FRAME
JULY 1, 1975 TO JUNE 30, 1977
LOCATION
MT
ABSTRACT
THE MAJOR OBJECTIVE OF THIS PROGRAM IS TO COORDINATE ALL THE COAL HYDROLOGY PROJECTS INTO A COHERENT PROGRAM, TO ASSIST AND SUPPLEMENT THE OTHER PROJECTS WHEN NEEDED, AND TO COOPERATE AND COORDINATE WITH OTHER INVESTIGATORS. RESULTS SERVE TO PROMOTE EFFICIENT DEVELOPMENT, UTILIZATION, AND CONSERVATION OF MONTANA'S COAL AND UNDERGROUND WATER RESOURCES. (MEAC)

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00000757
PROJECT TITLE
HYDROGEOLOGICAL RECONNAISSANCE OF THE FORT UNION FORMATION
INVESTIGATORS
WAYNE A. VAN VOAST / MARVIN R. MILLER
RESEARCH INSTITUTION
MONTANA BUREAU OF MINES & GEOLOGY
PRIMARY SPONSOR
MONTANA BUREAU OF MINES & GEOLOGY
SECONDARY SPONSOR(S)
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV.
PRIMARY FUNDING AMOUNT
30,000
SECONDARY FUNDING AMOUNT(S)
8,875
TIME FRAME
JULY 1975 TO JUNE 1977
LOCATION
MT
ABSTRACT
WELL INVENTORY SOUTH OF YELLOWSTONE RIVER HAS BEEN COMPLETED. WATER QUALITY SAMPLES FROM SELECTED WELLS HAVE BEEN COLLECTED AND ANALYZED. FIELD DATA COMPILED AND PLACED ON OPEN FILE. INFORMATION GATHERED WILL BE USED PRIMARILY TO SUPPLEMENT AND SUPPORT WAYNE VAN VOAST'S HYDROLOGIC STUDIES. COMPILATION AND TABULATION OF THE RESULTS HAVE BEEN SLOWER THAN HOPED BECAUSE A NEW DATA-HANDLING PROCESS (SYSTEM 2000) HAS BEEN INSTITUTED BY THE USGS AND ALL THE PROBLEMS HAVE NOT BEEN RESOLVED. RESULTS SERVE TO PROMOTE EFFICIENT UTILIZATION AND CONSERVATION OF WATER RESOURCES OF EASTERN MONTANA.

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00000758
PROJECT TITLE
HYDROLOGIC EVALUATION OF MINING AND RECLAMATION, BEULAH TRENCH AREA, MERCER COUNTY, NORTH DAKOTA
PROJECT NUMBER
ND76-077

INVESTIGATORS
ORLD A. CROSBY / WATER R. SCOTT / MARK CRAWLEY
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIV.
P.O BOX 778 / ROOM 332, NEW FEDERAL BUILDING /
3RD STREET AND ROSSER AVE. / BISMARCK, ND 58501
PRIMARY SPONSOR
U.S. BUREAU OF LAND MANAGEMENT, EMRIA / LAND REHAB DATA STAFF / BLDG 50 D-307 / DENVER, CO 80225
PRIMARY FUNDING AMOUNT
235,600
TIME FRAME
APR. 1, 1976 TO SEPT. 30, 1979
LOCATION
ND
ABSTRACT

PRELIMINARY DATA INDICATE THAT THE PROPOSED EXPANSION OF STRIP MINING ACTIVITIES IN THE BEULAH TRENCH AREA, NORTH DAKOTA, MAY RESULT IN CHANGES IN THE STREAMFLOW, GEOCHEMICAL, AND GROUND-WATER REGIMEN. SOME CHANGES WILL BE TEMPORARY BUT OTHERS MAY REMAIN EVEN AFTER STRIP MINING HAS CEASED. THE PURPOSE OF THIS INVESTIGATION IS TO: 1. DETERMINE PREMINING HYDROLOGIC AND GEOCHEMICAL CONDITIONS IN A SMALL REPRESENTATIVE DRAINAGE BASIN; 2. PROVIDE HISTORICAL DATA WITH WHICH TO COMPARE THE MAGNITUDE OF CHANGE WITH MINING; AND 3. DETERMINE THE HYDROLOGIC AND GEOCHEMICAL EFFECTS OF MINING IN NEARBY AREAS ON THE ANTELOPE CREEK AQUIFER.

THE APPROACH WILL BE TO: 1. COLLATE AND EVALUATE ALL EXISTING HYDROLOGIC AND GEOCHEMICAL DATA FROM PRIOR STUDIES IN THE AREA; 2. DEVELOP CONCEPTUAL MODELS OF THE HYDROLOGIC AND GEOCHEMICAL SYSTEMS; 3. SELECT LOCATIONS OF SITES FOR THE COLLECTION OF GEOLOGIC, HYDROLOGIC AND CHEMICAL DATA; 4. COLLECT NEW DATA; 5. DEVELOP DIGITAL MODELS REPRESENTING THE PRESENT HYDROLOGIC AND GEOCHEMICAL SYSTEMS; 6. ADJUST AND REFINE THE MODEL AS ADDITIONAL DATA BECOMES AVAILABLE.

STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'BEULAH TRENCH, NORTH DAKOTA RECLAMATION STUDY AREA,' SERIAL NO. 00000562, ERIS PROJECTS REPORT, VOL. 2, NO. 1, JANUARY 1977.

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00000759
PROJECT TITLE
INSTREAM-FLOW STRATEGIES
PROJECT NUMBER
WELUT NO. 023-76
INVESTIGATORS
RICHARD DEWSNUP / DALLIN JENSEN (DEWSNUP & JENSEN) /
WAYNE NELSON (ENVIRO-CONTROL)
RESEARCH INSTITUTION
ENVIRO CONTROL, INC. / ROCKVILLE, MD
DEWSNUP AND JENSEN / SALT LAKE CITY, UT
PRIMARY SPONSOR
U.S. FISH & WILDLIFE SERV., WELUT / HARVEY DOERKSEN /
PRIMARY FUNDING AMOUNT
115,000
TIME FRAME
AUG. 1976 TO AUG. 1977
LOCATION
WESTERN STATES
ABSTRACT

THE STUDY WILL IDENTIFY ALL EXISTING PROCEDURAL, METHODOLOGICAL, AND LEGAL MEANS FOR RESERVING FLOWS FOR ENHANCING FISH AND WILDLIFE PURPOSES AND EVALUATE THE EFFECTIVENESS OF THESE MEANS FOR RESERVING FLOWS AS TOOLS FOR USE BY STATE AND/OR FEDERAL FISH AND WILDLIFE AGENCIES. IN ADDITION, THE STUDY IS DESIGNED TO DETERMINE THE EXTENT OF UNOBLIGATED WATERS IN FEDERAL RESERVOIRS AND THE EXTENT TO WHICH SUCH WATERS MAY BE AVAILABLE TO ENSURE DOWNSTREAM FLOWS FOR FISH AND WILDLIFE.

THE RESULT WILL BE A MATRIX FOR EACH WESTERN STATE SUMMARIZING PERTINENT INFORMATION FOR EACH STRATEGY OF RESERVING FLOWS. THE MATRICES WILL INCLUDE: LEGAL BASIS FOR THE STRATEGY; ADMINISTRATIVE PROCEDURES AND DECISION POINTS FOR IMPLEMENTING IT; COSTS; TYPICAL PROBLEMS AND CONSTRAINTS; ESTIMATE OF USABILITY AND WHO CAN UTILIZE THE STRATEGIES.

00000760

PROJECT TITLE
ECOLOGICAL ANALYSIS OF AQUATIC AND TERRESTRIAL PLANT COMMUNITIES ASSOCIATED WITH SELECTED STRIP MINE AND STOCK PONDS IN THE NORTHERN GREAT PLAINS

PROJECT NUMBER
RC-824 (RMF&RES) / 16-606-CA(NDSU)

INVESTIGATORS
CLIFFORD L. HAWKES (RMF&RES) / RICHARD A. OLSON (NDSU)

RESEARCH INSTITUTION
U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD

COOPERATOR
NORTH DAKOTA STATE UNIV., DEPT. OF NATURAL RESOURCES

PRIMARY SPONSOR
U.S. EPA

PRIMARY FUNDING AMOUNT
22,000

TIME FRAME
JUNE 1976 TO AUG. 1977

LOCATION
WY ND SD

ABSTRACT
THIS STUDY WILL PROVIDE BASELINE INFORMATION ON THE ECOLOGY OF AQUATIC AND TERRESTRIAL PLANT COMMUNITIES ASSOCIATED WITH SELECTED STRIP MINE AND STOCK PONDS ON THE NORTHERN GREAT PLAINS. THE OBJECTIVES ARE: 1. TO DETERMINE THE AQUATIC AND TERRESTRIAL PLANT COMMUNITIES ASSOCIATED WITH STRIP MINE AND STOCK PONDS IN THE NORTHERN GREAT PLAINS; 2. TO DETERMINE THE PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS OF STRIP MINE PONDS AND STOCK PONDS THAT INFLUENCE THE PRESENCE OF SPECIFIC PLANT COMMUNITIES; 3. TO ASSESS THE STANDING CROP BIOMASS OF AQUATIC AND TERRESTRIAL PLANT COMMUNITIES ASSOCIATED WITH STRIP MINE AND STOCK PONDS; 4. TO DEVELOP MANAGEMENT GUIDELINES FOR STRIP MINE AND STOCK PONDS FOR PROMOTING HEALTHIER WETLAND FLORA COMPARABLE TO NATURAL WETLANDS.
THE STUDY AREAS ARE LOCATED IN THE HIDDEN WATER CREEK AREA NEED SHERIDAN, WYOMING; THE COLONY, WYOMING AREA; THE GASCOYNE, NORTH DAKOTA AREA; THE FIRESTEEL, SOUTH DAKOTA AREA; AND THE BEULAH, NORTH DAKOTA AREA. ONE STRIP MINE POND AND ONE STOCK POND WILL BE CHOSEN FOR INVESTIGATION AT EACH AREA. STRATIFIED RANDOM SAMPLING WILL BE EMPLOYED TO SAMPLE THE PATCHY CLUMPS OF AQUATIC VEGETATION. THE DENSITY, FREQUENCY, AND ESTIMATED PERCENT OF CANOPY COVERAGE WILL BE RECORDED FOR EACH PLANT SPECIES IN QUADRATS WITHIN EACH SPECIFIC PLANT COMMUNITY. MEAN RELATIVE DENSITY, MEAN RELATIVE FREQUENCY, AND MEAN RELATIVE CANOPY COVERAGE WILL BE DETERMINED FOR INDIVIDUAL PLANT SPECIES IN ALL QUADRATS OF THE SAME COMMUNITY TYPE AND SUMMED TO PROVIDE THE IMPORTANCE VALUE. STANDING CROP BIOMASS OF EACH SPECIES WILL BE DETERMINED FROM RANDOMLY SELECTED QUADRATS IN EACH PLANT COMMUNITY. DATA FROM THIS STUDY ALONG WITH DATA FROM THE OTHER STUDIES ON WATERFOWL USE, AQUATIC INVERTEBRATES, WATER CHEMICAL AND PHYSICAL CHARACTERISTICS, AND BASIN MORPHOMETRY BEING CONDUCTED ON THESE PONDS WILL BE ANALYZED USING COMPONENT, FACTOR AND MULTIVARIATE ANALYSES AND OTHER TECHNIQUES OF ANALYSIS DEEMED NECESSARY DURING PROCESSING OF THE DATA.

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00000761

PROJECT TITLE
COAL DEVELOPMENT IMPACTS ON DOMESTIC ANIMALS AND WILDLIFE IN NORTH DAKOTA-WEST CENTRAL NORTH DAKOTA EIS

INVESTIGATORS
C. HOLDEN BRINK, ANIMALS WORK GROUP

RESEARCH INSTITUTION
U.S. BUREAU OF LAND MANAGEMENT
P. O. BOX 30157 / BILLINGS, MT 59107

COOPERATOR
U.S. FISH & WILDLIFE SERV., OFFICE OF BIOL. SERV.

PRIMARY SPONSOR
U.S. BUREAU OF LAND MANAGEMENT

SECONDARY SPONSOR(S)
OLD WEST REGIONAL COMMISSION

PRIMARY FUNDING AMOUNT
600,000 (AMOUNT OF OVERALL EIS FUNDING)

SECONDARY FUNDING AMOUNT(S)
192,000 (AMOUNT OF OVERALL EIS FUNDING)

TIME FRAME
JUNE 1976 TO MAR. 1978

LOCATION
ND - BURLEIGH, MORTON, MCLEAN, DUNN, STARK, MERCER AND OLIVER COUNTIES

ABSTRACT
SUMMARIZATION AND ANALYSIS OF EXISTING INFORMATION TO ANSWER QUESTIONS REQUIRED BY THE EIS OUTLINE AND WORKBOOK GUIDANCE. INCLUDES NO NEW WILDLIFE OR DOMESTIC ANIMAL RESEARCH AND EMPLOYS NO SOPHISTICATED TECHNIQUES.

STUDY AFFILIATION
PART OF 'WEST CENTRAL NORTH DAKOTA ENERGY DEVELOPMENT ENVIRONMENTAL IMPACT STATEMENT,' U.S. BUREAU OF LAND MANAGEMENT AND OLD WEST REGIONAL COMMISSION. ERIS PROJECT LISTINGS, VOL. 2, NO. 1, JANUARY, 1977.

REPORTS AND PUBLICATIONS
DRAFT ENVIRONMENTAL IMPACT STATEMENT

FINAL EIS SCHEDULED FOR COMPLETION MAR., 1978.
AVAILABLE FROM BLM - BILLINGS

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00000762
PROJECT TITLE
CLOUD /PRECIPITATION MODIFICATION EFFECTS
INVESTIGATORS
R. F. PUESCHAL
RESEARCH INSTITUTION
U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN.
BOULDER, CO 80302
PRIMARY SPONSOR
U.S. EPA, OFFICE OF RESEARCH & DEV.
TIME FRAME
OCT. 1976 TO SEPT. 1977
ABSTRACT

PROJECT OBJECTIVE: DEVELOP A CRITERIA BY WHICH TO ASSESS THE IMPACT OF INCREASED USE OF SULFUR-RICH COALS IN POWER PLANTS ON THE QUALITY OF THE ATMOSPHERIC ENVIRONMENT, ON NEARBY CLOUDS AND ASSOCIATED WEATHER, AND ON LOCAL RADIATION BUDGETS.

CURRENT YEAR PLAN: CONDUCT AT LEAST SIX FIELD EFFORTS AT COLSTRIP, MONTANA; MAGNA, UTAH; AND FARMINGTON, NEW MEXICO.

PROGRESS REPORT: TEN FIELD EFFORTS WERE COMPLETED, DATA IS BEING EVALUATED AND REPORTS HAVE BEEN MADE TO EPA.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'INTEGRATED AEROSOL CHARACTERIZATION MONITORING - COLSTRIP, MONTANA,' SERIAL NUMBER 00000166,ERIS QUARTERLY REPORT, VOL. 1, NO. 1, NOVEMBER 1975.

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00000763
PROJECT TITLE
COLSTRIP AREA RADIOACTIVITY IN COAL
PROJECT NUMBER
1035
INVESTIGATORS
L. L. LLOYD
RESEARCH INSTITUTION
MONTANA DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES
STATE LABORATORY BLDG. / HELENA, MT 59601
PRIMARY SPONSOR
MONTANA STATE GOVERNMENT
TIME FRAME
JULY 1974 TO JUNE 1975
LOCATION
MT - COLSTRIP
ABSTRACT

RESEARCH OBJECTIVE: DETERMINE BASELINE RADIOACTIVITY IN AIR, SOIL, VEGETATION, AND WATER. ALSO MEASURE CONCENTRATIONS OF NATURAL RADIONUCLIDES IN THE COAL. THIS INFORMATION IS NECESSARY IN ORDER TO MEASURE ANY INCREASE IN BASELINE RADIOACTIVITY RESULTING FROM THE MINING OF COAL AND THE OPERATION OF THE COLSTRIP POWER PLANTS.

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00000764
PROJECT TITLE
DRAFT ENVIRONMENTAL IMPACT STATEMENT PROPOSED PLAN OF MINING AND RECLAMATION EAST DECKER AND EXTENSION MINES, DECKER COAL COMPANY, BIG HORN COUNTY, MONTANA
INVESTIGATORS
BRACE HAYDEN
RESEARCH INSTITUTION
MONTANA DEPT. OF STATE LANDS
HELENA, MT 59601
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY
SECONDARY SPONSOR(S)
DECKER COAL CO. / MONTANA STATE GOVERNMENT
PRIMARY FUNDING AMOUNT
200,000 (USGS)
SECONDARY FUNDING AMOUNT(S)
65,000 (DECKER COAL CO.)
35,000 (MONTANA)
TIME FRAME
MAY 1975 TO MAR. 1977
LOCATION
MT
ABSTRACT

STATE AND FEDERAL ACTION ON PROPOSED SURFACE-MINING AND RECLAMATION PLANS, EAST DECKER AND NORTH EXTENSION MINES, DECKER COAL COMPANY, BIG HORN COUNTY, MONTANA. COMPANY PROPOSES OPENING A NEW MINE COMPLETE WITH PLANT AND LOADING FACILITIES AND RAILROAD SPUR IN THE EAST DECKER AREA AND OPENING A MAJOR NORTHERN EXPANSION OF THE EXISTING WEST DECKER MINE THAT WOULD USE EXISTING EAST DECKER MINE FACILITIES. TO FACILITATE MINING, THE COMPANY ALSO PROPOSES RELOCATING SHORT SECTIONS OF A FEDERAL-AID SECONDARY HIGHWAY AND AN UNPAVED COUNTY ROAD. AN ESTIMATED 180 MILLION TONS OF LOW-SULFUR COAL WOULD BE REMOVED FROM AN AREA OF ABOUT 3,500 ACREA OVER A PERIOD OF ABOUT 20 YEARS AND SHIPPED TO ILLINOIS, MICHIGAN, AND TEXAS FOR USE IN ELECTRIC-POWER GENERATION PLANTS. (MEAC)

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00000765

PROJECT TITLE

POPLAR RIVER AIR QUALITY STUDIES

INVESTIGATORS

JAMES W. GELHAUS

PRIMARY SPONSOR

U.S. EPA, REGION VIII

PRIMARY FUNDING AMOUNT

76,500

TIME FRAME

FEB. 1977 TO FEB. 1978

LOCATION

MT CANADA

ABSTRACT

BACKGROUND LEVELS OF VARIOUS PARAMETERS WILL BE MADE IN THE POPLAR RIVER AREA OF NORTHEASTERN MONTANA PRIOR TO DEVELOPMENT OF POWER PLANTS ACROSS THE BORDER IN CANADA. AIR QUALITY MEASUREMENTS WILL BE MADE FOR SULFUR DIOXIDE, NITROGEN DIOXIDE AND PARTICULATE MATTER. BACKGROUND CONCENTRATIONS OF TRACE ELEMENTS WILL BE ANALYZED IN THE VEGETATION. SOIL SAMPLES WILL ALSO BE COLLECTED AND STORED FOR FUTURE ANALYSIS. COAL SAMPLES FROM THE CANADIAN COAL MINE WILL BE ANALYZED FOR TRACE ELEMENTS, SULFUR, ASH AND VARIOUS OTHER PROPERTIES. MEASUREMENTS OF VARIOUS METEOROLOGICAL VARIABLES AND VISIBILITY WILL ALSO BE MADE. (MEAC)

REPORTS AND PUBLICATIONS

A REPORT ON EACH STUDY WILL BE MADE AT THE COMPLETION OF THE PROJECT. QUARTERLY PROGRESS REPORTS WILL ALSO BE AVAILABLE.

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00000766

PROJECT TITLE

A NORTHERN PIKE SPAWNING MARSH AND WATERFOWL NESTING AREA USING EFFLUENT WATER FROM A SURFACE COAL MINE

PROJECT NUMBER

F&WS 14-16-1008-2114 / MSU G&C 795

INVESTIGATORS

DR. ROBERT ENG / DR. HAROLD PICTON (MSU - DEPT. OF BIOLOGY) / DR. RICHARD W. GREGORY (MSU, COOP. FISHERY UNIT)

RESEARCH INSTITUTION

MONTANA STATE UNIV., COOP. FISHERY RESEARCH UNIT
BOZEMAN, MT 59715

COOPERATOR

MONTANA DEPT. OF FISH AND GAME / MONTANA DEPT. OF STATE LANDS / MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY SPONSOR

U.S. FISH & WILDLIFE SERV., WELUT
MR. LEE ISCHINGER / ROOM 286, FEDERAL BUILDING /
FORT COLLINS, CO 80501

PRIMARY FUNDING AMOUNT

80,180

TIME FRAME

SEPT. 1976 TO APR. 1979

LOCATION

MT

ABSTRACT

PROJECT OBJECTIVE: CONDUCT A FIELD DEMONSTRATION AND VERIFICATION OF A HABITAT ENHANCEMENT TECHNIQUE AT DECKER, MONTANA USING SETTLING (SEDIMENTATION) POND DECANT WATER TO DEVELOP A NORTHERN PIKE SPAWNING AND WATERFOWL NESTING MARSH.

TASKS: 1. TO CONDUCT FERTILIZATION AND HATCHING EXPERIMENTS WITH NORTHERN PIKE EGGS IN DECKER COAL MINE EFFLUENT WATERS; 2. TO MODIFY AN EXISTING BASIN INTO A CONTROLLED, NORTHERN PIKE SPAWNING MARSH AND INCLUDE 8-10 WATERFOWL NESTING ISLANDS IN THE CONSTRUCTION; 3. TO CAPTURE AND PLANT SEXUALLY MATURE NORTHERN PIKE IN THE SPAWNING MARSH; 4. TO MONITOR DEVELOPMENT, HATCHING SUCCESS AND SURVIVAL OF FRY AND FINGERLING PIKE IN THE MARSH. TO MONITOR WATERFOWL PRODUCTION AND AQUATIC MAMMAL USE ON THE MARSH. (MEAC)

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00000767

PROJECT TITLE

HABITAT AND WILDLIFE EVALUATION ON POTENTIAL OFFSTREAM REGULATING RESERVOIR SITES NEAR INTAKE, MONTANA

PROJECT NUMBER

1536

INVESTIGATORS

JON SWENSON

RESEARCH INSTITUTION

MONTANA DEPT. OF FISH AND GAME
GLENDIVE, MT

PRIMARY SPONSOR

INTAKE WATER CO.
HOUSTON, TX

PRIMARY FUNDING AMOUNT

18,450

TIME FRAME

DEC. 1976 TO AUG. 1977

LOCATION

MT

ABSTRACT

AN AREA OF LAND NEAR INTAKE, MONTANA, LYING SOUTH OF THE

YELLOWSTONE RIVER ENCOMPASSES SEVERAL POSSIBLE ALTERNATE SITES FOR AN OFF-STREAM REGULATING RESERVOIR. PRIOR PREHENSIVE VEGETATION AND WILDLIFE SURVEY IS NECESSARY TO ENSURE THAT THE EFFECTS OF THE RESERVOIR WILL BE MINIMAL. OBSERVATIONS OF MIGRATORY BIRD USE ALONG THE YELLOWSTONE RIVER SHOULD BE INCLUDED.
OBJECTIVES: 1. TO PREPARE A VEGETATIVE COVER MAP OF THE AREA. 2. TO DETERMINE SEASONAL DISTRIBUTION, HABITAT USE, AND DENSITIES (WHERE POSSIBLE) OF WILDLIFE SPECIES INHABITING THE AREA. 3. TO CONDUCT STUDIES OF MIGRATORY BIRDS USING THE PORTION OF THE YELLOWSTONE RIVER WHICH BORDERS THE AREA. 4. TO RECORD THE OCCURRENCE OF SPECIES OF SPECIAL INTEREST, SUCH AS EAGLE NESTS, PRAIRIE DOG TOWNS, AND HERON ROOKERIES.
PROCEDURES WILL INCLUDE THE PREPARATION OF A MAP OF VEGETATION TYPES AND SURFACE HYDROLOGY OF THE AREA; USE OF COLOR AERIAL PHOTOGRAPHS OF THE AREA; PERIODIC AERIAL SURVEYS AND OBSERVATIONS FROM SYSTEMATIC VEHICLE ROUTES OF MAJOR GAME SPECIES AND MIGRATORY BIRD SPECIES. (MEAC)

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00000768
PROJECT TITLE
CIRCLE WEST BASELINE STUDY
INVESTIGATORS
GERHARD M. KNUDSEN
RESEARCH INSTITUTION
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
HELENA, MT 59601
PRIMARY SPONSOR
DREYER BROTHERS, INC.
TIME FRAME
JAN. 1976 TO JUNE 1978
LOCATION
MT
ABSTRACT

DURING MID-1974, DREYER BROTHER, INC., A SUBSIDIARY OF BURLINGTON NORTHERN, NOTIFIED THE STATE OF ITS INTENTION TO DEVELOP A COAL PROCESSING FACILITY IN MCCONE COUNTY, MT. AT THIS TIME, DREYER BROTHERS HAS NOT APPLIED FOR A CERTIFICATE UNDER THE MAJOR FACILITY SITING ACT. HOWEVER, IN ACCORDANCE WITH THE ACT, IT HAS CHOSEN TO CONTRACT WITH DNRC IN ORDER TO INITIATE PORTIONS OF STUDIES WHICH ARE ULTIMATELY REQUIRED BY LAW IF THE PROJECT PROCEEDS. IN GENERAL, THE CONTRACT CALLS FOR A BASELINE STUDY AND COORDINATION OF DEPARTMENT ACTION WITH ALL LEVELS OF GOVERNMENT AND INTERESTED PARTIES. CONSEQUENTLY, INFORMATION RESULTING FROM THE STUDIES WILL BE AVAILABLE FOR PREPARATION OF ANY ENVIRONMENTAL IMPACT STATEMENTS.
THE LONG-RANGE PLANS FOR THE CIRCLE WEST PROJECT INCLUDE: 1. MANUFACTURE OF UP TO 3,000 TONS PER DAY OF AMMONIA; 2. MANUFACTURE OF UP TO 5,000 TONS PER DAY OF METHANOL-METHYL FUEL; 3. MANUFACTURE OF UP TO 30,000 BARRELS PER DAY OF SYNTHETIC DIESEL FUEL OIL; 4. DEVELOPMENT OF MINING OPERATIONS TO PROVIDE THE LIGNITE REQUIREMENTS; 5. DEVELOPMENT OF AN IRRIGATION SYSTEM FOR BOTH MINE RECLAMATION & GENERAL AGRICULTURAL AND LIVESTOCK OPERATIONS ON THE DREYER RANCH; 6. CONSTRUCTION OF A WATER SUPPLY SYSTEM, BASED ON FORT PECK RESERVOIR; 7. CONSTRUCTION OF RAILWAY SPUR, CONNECTING ROAD, ELECTRICAL SERVICE LINE, & POSSIBLY A SMALL POWER PLANT TO MEET NEEDS OF FACILITY; 8. CONSTRUCTION OF A TOWNSITE TO MEET HOUSING NEEDS OF CONSTRUCTION WORK FORCE (IF HOUSING IS NOT OTHERWISE AVAILABLE). (MEAC)

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00000769
PROJECT TITLE
COLSTRIP ENVIRONMENTAL IMPACT STATEMENT
INVESTIGATORS
RONALD M. WILKERSON
RESEARCH INSTITUTION
BONNEVILLE POWER ADMIN.
BOX 3621 / PORTLAND, OR 97208
COOPERATOR
U.S. GEOLOGICAL SURVEY / U.S. BUREAU OF LAND MANAGEMENT / U.S. FOREST SERVICE / RURAL ELECTRIFICATION ADMIN. / U.S. BUREAU OF INDIAN AFFAIRS / U.S. BUREAU OF RECLAMATION / U.S. FISH & WILDLIFE SERV. / U.S. NATIONAL PARK SERVICE / CONFEDERATED SALISH & KOOTENAI TRIBES
PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR
TIME FRAME
JAN. 1977 TO FEB. 1978
ABSTRACT

THE PROPOSED COLSTRIP PROJECT CONSISTS OF A POWER PLANT, WATER AND COAL SUPPLY SYSTEMS, AND TRANSMISSION LINES BETWEEN COLSTRIP AND HOT SPRINGS BEING PLANNED BY A CONSORTIUM OF NORTHWEST UTILITIES: MONTANA POWER CO., PUGET SOUND POWER & LIGHT CO., WASHINGTON WATER POWER CO., PACIFIC POWER & LIGHT CO., AND PORTLAND GENERAL ELECTRIC.
THE EIS WILL PROVIDE ENVIRONMENTAL INFORMATION TO FEDERAL AGENCIES INVOLVED IN THE PROJECT. THOSE AGENCIES TAKING PART IN PREPARING THE EIS WILL BE THE FOREST SERVICE AND BUREAU OF LAND MANAGEMENT, WHICH HAVE RESPONSIBILITIES FOR GRANTING TRANSMISSION RIGHT-OF-WAY PERMITS; THE GEOLOGICAL SURVEY, WHICH IS RESPONSIBLE FOR APPROVING COAL MINING PLANS; THE BUREAU OF INDIAN

AFFAIRS; THE BUREAU OF RECLAMATION; NATIONAL PARK SERVICE; ENVIRONMENTAL PROTECTION AGENCY, THE FISH AND WILDLIFE SERVICE AND THE RURAL ELECTRIFICATION ADMINISTRATION. THE CONFEDERATED SALISH AND KOOTENAI TRIBES OF THE FLATHEAD AGENCY WILL ALSO PARTICIPATE. A STUDY PLAN FOR THE EIS IS CURRENTLY BEING PREPARED FOR APPROVAL BY THE DEPARTMENT OF THE INTERIOR. THE COLSTRIP EIS WILL BE PREPARED IN CLOSE COORDINATION WITH ANOTHER WHICH WILL EXAMINE IMPACTS ASSOCIATED WITH COAL DEVELOPMENT IN THE NORTHERN POWDER RIVER BASIN IN MONTANA. THAT EIS IS A JOINT FEDERAL STATE EFFORT WITH THE GEOLOGICAL SURVEY ACTING AS LEAD BUREAU.

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00000770

PROJECT TITLE

NORTHERN GREAT PLAINS AIR QUALITY DATA GATHERING NETWORK

PROJECT NUMBER

R008127-01-0

INVESTIGATORS

JAY CRAWFORD

RESEARCH INSTITUTION

NORTH DAKOTA STATE DEPT. OF HEALTH, DIV. OF ENV. ENG.
1200 MISSOURI AVENUE / BISMARCK, ND 58505

PRIMARY SPONSOR

U.S. EPA, REGION VIII

PRIMARY FUNDING AMOUNT

61,216

TIME FRAME

SEPT. 1974 TO OCT. 1976

LOCATION

ND MT WY

ABSTRACT

OBJECTIVE: TO EXPAND THE PREVIOUSLY EXISITING DATA BASE FOR AIR QUALITY INFORMATION WITHIN THE ENERGY DEVELOPMENT AREA OF WESTERN NORTH DAKOTA.

METHODOLOGY: INSTALLATION OF AIR QUALITY MONITORING EQUIPMENT AT SEVEN NEW SITES EXPANDING THE STATE DEPARTMENT OF HEALTH'S DATA GATHERING NETWORK.

APPLICATION OF WORK: TO AID THE DEPARTMENT OF HEALTH AND THE U.S. EPA IN DECISION MAKING POLICIES REGARDING INDUSTRIALIZATION POTENTIALS IN WESTERN NORTH DAKOTA AND IN THE NORTHERN GREAT PLAINS AREA. (E. MONTANA, W. NORTH DAKOTA, NE WYOMING)

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00000771

PROJECT TITLE

DETERMINATION OF PARTICULATE EMISSION FACTORS FROM LIGNITE MINING OPERATIONS

PROJECT NUMBER

YA-512-CT6-183

INVESTIGATORS

JAY CRAWFORD

RESEARCH INSTITUTION

NORTH DAKOTA STATE DEPT. OF HEALTH, DIV. OF ENV. ENG.
1200 MISSOURI AVE / BISMARCK, ND 58505

PRIMARY SPONSOR

U.S. BUREAU OF LAND MANAGEMENT

PRIMARY FUNDING AMOUNT

47,874

TIME FRAME

MAY 1976 TO DEC. 1976

LOCATION

ND

ABSTRACT

OBJECTIVE: TO DETERMINE PARTICULATE EMISSION FACTORS FROM LIGNITE MINING OPERATIONS.

METHODOLOGY: MEASURE PARTICULATE CONCENTRATIONS IN THE VICINITY OF A LIGNITE MINE AND CORRELATE THIS WITH SPECIFIC MINING OPERATIONS AND ON SITE METEOROLOGY.

APPLICATION OF WORK: USE THESE PARTICULATE EMISSION FACTORS IN AIR MODELING EFFORTS TO ASSESS FUTURE IMPACTS FROM EXPANDED MINING OPERATIONS IN THE ENERGY DEVELOPMENT AREA AT WESTERN NORTH DAKOTA.

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00000772

PROJECT TITLE

ANALYSIS OF LIGNITE ASH AND SOILS IN THE VICINITY OF ESTABLISHED LIGNITE BURNING POWER PLANTS FOR NATURALLY OCCURRING RADIONUCLIDES

INVESTIGATORS

GLENN LYKKEN

RESEARCH INSTITUTION

UNIV. OF NORTH DAKOTA, DEPT. OF PHYSICS
GRAND FORKS, ND 58202

PRIMARY SPONSOR

UNIV. OF NORTH DAKOTA

PRIMARY FUNDING AMOUNT

500

TIME FRAME

MAR. 1976 TO JAN. 1977

LOCATION

ND

ABSTRACT

OBJECTIVE: TO ANALYZE LIGNITE ASH FROM AND SOILS IN, THE VICINITY OF THE UNIVERSITY OF NORTH DAKOTA AND NORTH DAKOTA STATE UNIVERSITY FOR NUCLIDES IN THE RADIOACTIVE SERIES 226RA (FROM 238U) AND 232TH AND

OBTAIN THE SPECIFIC ACTIVITY PER GRAM. TO ANALYZE LIGNITE ASH FROM SOILS IN THE VICINITY OF THE ABOVE NAMED LOCATIONS FOR THE AMOUNT OF THE TRACE ELEMENTS AL, AS, CD, MG, SE, TI, V AND ZN PRESENT. TO DETERMINE THE AMOUNT OF EACH DETECTABLE ELEMENT PRESENT AT THE SELECTED LOCATIONS AS RELATED TO PREVAILING WINDS SO AS TO DETERMINE THEIR BUILD-UP DUE TO LIGNITE BURNING; COMPARE AMOUNTS IN ASH.

METHODOLOGY: LIGNITE ASH SAMPLES WILL BE COLLECTED PERIODICALLY FROM POWER PLANTS AT UND AND NDSU AND SYSTEMATIC SOIL SAMPLES WILL BE COLLECTED AT POINTS UP TO ONE MILE FROM THE POWER PLANTS. INITIALLY THE TYPE AND SPECIFIC ACTIVITIES OF NATURALLY OCCURRING RADIONUCLIDES WILL BE DETERMINED BY COUNTING THE EMITTED GAMMA RAYS WITH A HIGH RESOLUTION GE (LI) DETECTOR SYSTEM AND COMPARING THESE SPECTRA TO THOSE OF KNOWN STANDARDS. CONCENTRATIONS OF THE TRACE ELEMENTS WILL BE DETERMINED BY NEUTRON ACTIVATION ANALYSIS. MEASURED SAMPLE MASSES AND STANDARDS WILL BE EXPOSED TO THE THERMAL NEUTRON FLUX AS PRODUCED BY A TEN MILLIGRAM 252 CF SOURCE LOCATED AT THE UNIVERSITY. GAMMA RAYS FROM THE SAMPLES AND STANDARDS WILL BE COUNTED AND COMPARED SO AS TO OBTAIN MAXIMUM AMOUNT OF TRACE ELEMENTS PRESENT. SUFFICIENT SAMPLES WILL BE EXAMINED SO AS TO OBTAIN GOOD STATISTICS FOR THE AMOUNT AND DISTRIBUTION OF RADIONUCLIDES AND TRACE ELEMENTS PRESENT.

APPLICATION OF WORK: THIS PROJECT WILL ATTEMPT TO TO STUDY THE ALREADY PRESENT EFFECTS OF EXTENDED LIGNITE BURNING AT ESTABLISHED POWER PLANTS. THE RESULTS SHOULD GIVE A BETTER INSIGHT INTO THE ENVIRONMENTAL EFFECTS OF LARGE-SCALE LIGNITE BURNING POWER PLANTS.

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00000773

PROJECT TITLE

DETERMINATION OF TRACE ELEMENTS IN THE ENGLISH COULEE SYSTEM: PRESENCE DUE TO EXTENDED LIGNITE BURNING

INVESTIGATORS

GLENN LYKKEN

RESEARCH INSTITUTION

UNIV. OF NORTH DAKOTA, DEPT. OF PHYSICS
UNIVERSITY STATION / GRAND FORKS, ND 58202

PRIMARY SPONSOR

NORTH DAKOTA STATE UNIV., WATER RESOURCES RESEARCH INST.

SECONDARY SPONSOR(S)

UNIV. OF NORTH DAKOTA, DEPT. OF PHYSICS

PRIMARY FUNDING AMOUNT

4,030

SECONDARY FUNDING AMOUNT(S)

3,080

TIME FRAME

OCT. 1976 TO SEPT. 1977

LOCATION

ND

ABSTRACT

OBJECTIVE: ANALYZE WATER AND SILT SAMPLES TAKEN FROM SELECTED POINTS IN THE ENGLISH COULEE, WHICH FLOWS THROUGH THE UNIVERSITY OF NORTH DAKOTA CAMPUS, FOR TRACE ELEMENTS OF AL, AS, CD, CR, CU, MG, MN, NA, SE, TI, V, ZN, AND THE RADIONUCLIDES 226RA AND 232TH. TO ANALYZE SNOW AND RUN-OFF WATER FROM THE UNIVERSITY OF NORTH DAKOTA CAMPUS FOR THE PRECEDING TRACE ELEMENTS. TO COMPARE THE RESULTS OF THE TWO PRECEDING OBJECTIVES WITH TRACE ELEMENTS FOUND IN LIGNITE ASH AND CAMPUS SOIL SAMPLES IN ORDER TO DETERMINE THE BUILDUP DUE TO EXTENDED LIGNITE BURNING AND WATER TRANSPORT.

METHODOLOGY: WATER AND SILT SAMPLES WILL BE COLLECTED FOUR TIMES DURING THE YEAR AND SNOW AND RUN-OFF WATER SAMPLES WILL BE COLLECTED AT TIMES WHEN THEY ARE READILY AVAILABLE. THE LIQUID SAMPLES WILL BE ACTIVATED BY EMERSING A TEN MILLIGRAM CALIFORNIUM 252 SOURCE IN THE APPROXIMATE CENTER OF A ONE LITER SAMPLE. BY ANALYZING THE GAMMA RAY SPECTRA FROM THE ACTIVATED SAMPLES AND COMPARING THE RESULTS WITH THOSE FROM KNOWN STANDARDS, THE AMOUNTS AND TYPES OF TRACE ELEMENTS PRESENT WILL BE DETERMINED. THE SILT SAMPLES WILL BE ACTIVATED BY PLACING THEM IN THE VICINITY OF THE CALIFORNIUM 252 SOURCE AND THEN ANALYZED BY THE SAME PROCEDURE.

APPLICATION OF WORK: THIS PROJECT WILL STUDY SOME OF THE EXTENDED LIGNITE BURNING AT THE UNIVERSITY OF NORTH DAKOTA. THE RESULTS SHOULD GIVE A BETTER INSIGHT INTO THE ENVIRONMENTAL EFFECTS OF LARGE-SCALE LIGNITE BURNING ANYWHERE IN THE STATE.

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00000774

PROJECT TITLE

NUMERICAL SIMULATION OF THE EFFECTS OF COOLING TOWER COMPLEXES ON CLOUDS AND SEVERE STORMS

INVESTIGATORS

DR. H. D. ORVILLE / DR. PAUL SMITH

RESEARCH INSTITUTION

SOUTH DAKOTA SCHOOL OF MINES & TECH., INST. OF ATMOS. SCI.
RAPID CITY, SD 57701

PRIMARY SPONSOR

NUCLEAR REGULATORY COMMISSION

PRIMARY FUNDING AMOUNT

66,314

TIME FRAME

SEPT. 1976 TO SEPT. 1978

LOCATION
SD
ABSTRACT
A TWO-PART STUDY OF THE EFFECTS OF ELECTRICAL POWER PLANT COOLING TOWER COMPLEXES ON THE ENVIRONMENT IS PROPOSED. WE PLAN TO APPLY A ONE-DIMENSIONAL, STEADY-STATE NUMERICAL CONVECTION MODEL WITH PARAMETERIZED MICROPHYSICS TO ESTABLISH A CLIMATOLOGY OF THE EFFECTS OF COOLING TOWERS ON THE ENVIRONMENT, PARTICULARLY WITH REGARD TO CLOUD FORMATION. WE ALSO PROPOSE TO STUDY THE EFFECTS OF COOLING TOWER HEAT AND VAPOR EFFLUENTS ON SEVERE CONVECTIVE STORMS VIA NUMERICAL MODELING TECHNIQUES. TO DO THIS WE PLAN TO USE A NUMERICAL MODEL OF HAILSTORM DEVELOPMENT WHICH HAS EVOLVED OVER THE PAST 14 YEARS FROM A MODEL OF CUMULUS GROWTH OVER MOUNTAINS.
REPORTS AND PUBLICATIONS
ORVILLE, H. D. 'A NUMERICAL MODELING STUDY OF W'ASTE HEAT EFFECTS ON SEVERE WEATHER' TO BE PRESENTED AT THE WASTE HEAT MANAGEMENT & UTILIZATION CONFERENCE, MIAMI BEACH, FL. MAY, 1977.

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00000775
PROJECT TITLE
WATERFOWL USE OF WATER IMPOUNDMENTS LEFT BY STRIP MINING IN THE NORTHERN HIGH PLAINS
INVESTIGATORS
KEITH E. SEVERSON
RESEARCH INSTITUTION
U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD
PRIMARY SPONSOR
U.S. EPA
PRIMARY FUNDING AMOUNT
18,500
TIME FRAME
SEPT. 1976 TO JUNE 1979
LOCATION
SHERIDAN, WY; COLONY, WY; GASCOYNE, ND; BEULAH, ND; AND FIRESTEEL, SD
ABSTRACT
OBJECTIVES: 1. TO DETERMINE RELATIVE USE OF SELECT STRIP MINE AND STOCKPONDS BY MIGRATING WATERFOWL IN SPRING AND FALL. 2. TO DETERMINE WATERFOWL PRODUCTION ON SELECTED STRIP MINE AND STOCKPONDS. 3. TO RELATE WATERFOWL USE OF THESE PONDS TO SELECTED PHYSICAL, CHEMICAL, AND BIOLOGICAL ATTRIBUTES OF THE PONDS AND SURROUNDING AREAS. 4. TO DEVELOP A SET OF GUIDELINES TO BE USED IN THE DESIGN AND CONSTRUCTION OF STRIP MINE IMPOUNDMENTS THAT WOULD ENHANCE THEIR VALUE TO WATERFOWL.
METHODS: WATERFOWL WILL BE COUNTED BY SPECIES DURING SPRING AND FALL MIGRATION AND BROODS AND NUMBERS OF DUCKLINGS WILL BE COUNTED IN JULY ON 60 STRIP MINE AND 12 STOCKPONDS IN FIVE AREAS IN THE NORTHERN GREAT PLAINS. THESE COUNTS WILL BE CORRELATED WITH NINE POND PHYSICAL, SEVEN WATER CHEMISTRY, AND SEVEN POND BIOLOGICAL CHARACTERISTICS USING A STEPWISE MULTIPLE REGRESSION ANALYSIS.

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00000776
PROJECT TITLE
CLOUD AND PRECIPITATION MODIFICATION EFFECTS OF POLLUTANTS FROM ENERGY PRODUCTION
INVESTIGATORS
DR. RUDOLPH PUESCHEL / DR. FARN PARUNGO / PAUL ALLEE / CHARLES VAN VALIN
RESEARCH INSTITUTION
U.S NATIONAL OCEANIC & ATMOSPHERIC ADMIN. / BOULDER, CO
PRIMARY SPONSOR
U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN. / J. N. TOWNSEND / ROCKVILLE, MD 20852
PRIMARY FUNDING AMOUNT
FY 75 - 100,000
TIME FRAME
MAY 1975 TO OCT. 1979
LOCATION
MT NM UT
ABSTRACT
OBJECTIVE: TO DEVELOP CRITERIA BY WHICH TO ASSESS THE IMPACT OF INCREASED USE OF SULFUR-RICH COALS IN POWER PLANTS ON THE QUALITY OF THE ATMOSPHERIC ENVIRONMENT ON NEARBY CLOUDS AND ASSOCIATED WEATHER, AND ON LOCAL RADIATION BUDGETS.
APPROACH: MEASUREMENTS WILL BE TAKEN IN AND AROUND PLUMES FROM POWER PLANTS TO DETERMINE THE SIZE, SHAPE, AND CHEMICAL COMPOSITION OF ATMOSPHERIC POLLUTANTS FROM THE PLANTS, ESPECIALLY GASEOUS AND PARTICULATE SULPHUR AND HEAVY METALS COMPOUNDS. EMPHASIS WILL BE ON AEROSOLS WITH CLOUD MODIFYING PROPERTIES. SINCE THE GAS-TO-PARTICLE CONVERSION RATE AND THE SIZE OF THE SULFURIC ACID AND SULFATE PARTICLES, HENCE THEIR ENVIRONMENTAL IMPACT, ARE FUNCTIONS OF THIRD-BODY TRACE CONSTITUENTS, WATER VAPOR MIXING RATIO, AND ULTRA-VIOLET IRRADIATION, THE FIELD STUDIES MUST BE PERFORMED UNDER DIFFERENT CLIMATIC CONDITIONS AND IN THE ABSENCE AND PRESENCE OF INDEPENDENT POLLUTION SOURCES.
PROGRESS/PLANS: THE FIRST FIELD STUDY WAS CONDUCTED NEAR COLSTRIP, MONTANA, DURING A 4-WEEK PERIOD IN MAY AND JUNE IN AN AREA WHERE A LARGE POWERPLANT IS UNDER

CONSTRUCTION. THESE MEASUREMENTS WILL PROVIDE 'CLEAN AIR' BACKGROUND VALUES FOR COMPARISON WITH FUTURE MEASUREMENTS, TO BE TAKEN PERIODICALLY AFTER THE PLANT BEGINS OPERATION IN LATE AUGUST, TO DETERMINE THE EFFECTS OF POWERPLANT EFFLUENTS. PLUME STUDIES AT THE FOUR CORNERS PLANT NEAR FARMINGTON, NEW MEXICO, COMMENCED THE LAST WEEK IN JULY. THIS 1-WEEK PILOT STUDY WILL BE FOLLOWED IN OCTOBER BY A MORE COMPREHENSIVE 4-WEEK FIELD STUDY. FUTURE PLANS INCLUDE THE INITIATION IN DECEMBER OF A 2-WEEK PILOT STUDY AT THE KENNECOTT, UTAH, COPPER SMELTER WHICH HAS THE LARGEST SULPHUR DIOXIDE OUTPUT IN THE COUNTRY.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'INTEGRATED AEROSOL CHARACTERIZATION MONITORING-COLSTRIP, MONTANA,' SERIAL NUMBER 00000166, ERIS QUARTERLY REPORTS, VOL. 1, NO.1, NOVEMBER, 1975

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00000777

PROJECT TITLE

PARTICULATE MONITORING AND AIR POLLUTION POTENTIAL FOR AMAX MINING OPERATIONS AT GILLETTE, WYOMING

INVESTIGATORS

JAMES A. HEIMBACH, JR.

RESEARCH INSTITUTION

ATMOSPHERIC SERVICES ASSOCIATES / 1324 CHERRY DRIVE /
BOZEMAN, MT 59715

PRIMARY SPONSOR

AMAX COAL CO.

PRIMARY FUNDING AMOUNT

28,000

TIME FRAME

JUNE 1976 TO JUNE 1977

LOCATION

WY - EAGLE BUTTE MINE, BELLE AYR NORTH & SOUTH MINES

ABSTRACT

THE INTENT OF THIS PROJECT IS TO DETERMINE BASELINE AND MINING OPERATION LEVELS OF SUSPENDED AND SETTLED PARTICULATE LEVELS. IN ADDITION THERE IS A PROGRAM OF METEOROLOGICAL SAMPLING WHICH WILL BE USED TO DEFINE THE AIR POLLUTION POTENTIAL OF THE AREA. THERE ARE TWO MINING SITES INVOLVED: THE EAGLE BUTTE MINE TO THE NORTH OF GILLETTE, WYOMING, AND THE BELLE AYRE MINE TO THE SOUTH. THE DATA OF THIS PROJECT WILL EVENTUALLY BE USED FOR ABATEMENT PLANNING AND IMPLEMENTATION. (MEAC)

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00000778

PROJECT TITLE

LIDAR TECHNIQUES FOR MEASURING PARTICULATE POLLUTANTS FROM ENERGY PRODUCTION AND THEIR TRANSPORT AND DISPERSION PROCESSES

INVESTIGATORS

V. E. DERR / R. L. SCHWIESOW / G. T. MCNICE / N. L. ABSHIRE / G. M. LERFALD / M. J. POST / R. E. CUPP / R. F. CALFEE

RESEARCH INSTITUTION

U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN. / ATMOSPHERIC SPECTROSCOPY PROGRAM AREA, R45X3 / BOULDER, CO 80302

PRIMARY SPONSOR

U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN.
JOHN W. TOWNSEND, JR. / 6010 EXECUTIVE BLVD / ROCKWELL, MD 2065

PRIMARY FUNDING AMOUNT

FY 76 - 245,000

TIME FRAME

JULY 1975 TO JULY 1980

LOCATION

CO MT

ABSTRACT

OBJECTIVES: DEVELOP AND VERIFY ECONOMICAL LIDAR MEASUREMENT TECHNIQUES FOR REMOTE TRACING AND ANALYZING OF POLLUTANTS ARISING FROM POWER PLANTS. DEVELOP AND TEST AN OPERATIONAL, INFRARED, CONTINUOUS-WAVE DOPPLER LIDAR SENSOR FOR HIGH RESOLUTION MEASUREMENTS OF ATMOSPHERIC WIND, TURBULENCE, AND AEROSOL BACKSCATTER ASPECTS OF POLLUTANT TRANSPORT.

APPROACH: WE ARE EXTENDING THE CAPABILITIES OF THE EXISTING PULSED LIDAR TO INCLUDE POLARIZATION SENSITIVITY AND MULTIWAVELENGTH OPERATION. THIS EQUIPMENT IS BEING USED IN FIELD EXPERIMENTS AT COLSTRIP, MONTANA AND IN VARIOUS COLORADO LOCATIONS TO TEST THE PLUME CHARACTERIZATION CAPABILITY OF THE LIDAR. EXPERIMENTAL DEVELOPMENTS ARE GUIDED BY THEORETICAL STUDIES ON AEROSOL BACKSCATTER PROPERTIES. THE WPL MOBILE DOPPLER LIDAR SYSTEM IS BEING APPLIED TO WIND PROFILE MEASUREMENTS IN VARIOUS ENVIRONMENTS AND TO THE VELOCITY STRUCTURE OF NATURAL ATMOSPHERIC VORTICES. EQUIPMENT MODIFICATIONS ARE UNDERWAY TO IMPROVE THE LIDAR CAPABILITY IN STACK EMISSION MEASUREMENTS, THREE-COMPONENT WIND PROFILES, AND LARGE-DIAMETER AEROSOL PROFILES.

PROGRESS: LIDAR BACKSCATTER DATA ON INTENSITY AND POLARIZATION FROM VARIOUS NATURAL AND MANMADE ATMOSPHERIC PARTICLES HAS BEEN OBTAINED IN THREE DIFFERENT LOCATIONS. DEPOLARIZATION IS A SIGNIFICANT AEROSOL IDENTIFIER. THEORETICAL CALCULATIONS ARE UNDERWAY. DOPPLER LIDAR 1-COMPONENT WIND PROFILE MEASUREMENTS HAVE BEEN COMPLETED IN DESERT, SEACOAST, AND URBAN ENVIRONMENTS. PRELIMINARY VELOCITY DATA IS AVAILABLE ON COOLING TOWER PLUMES AND POWER PLANT STACK-EFFLUENTS.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'INTEGRATED AEROSOL CHARACTERIZATION MONITORING,' SERIAL NUMBER 00000166, ERIS QUARTERLY REPORT, VOL. 1, NO. 1, NOVEMBER, 1975.

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00000779

PROJECT TITLE
POLICY EVALUATION SUPPORT FOR AIR AND WATER ENVIRONMENTS

PROJECT NUMBER
FEA PROJECT NO: CO-04-60460-00

INVESTIGATORS
DR. BRIAN L. MURPHY / DR. ARTHUR BASS / DR. J. R. MAHONEY

RESEARCH INSTITUTION
ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC. / 696 VIRGINIA ROAD / CONCORD, MA 01742

PRIMARY SPONSOR
U.S. FEDERAL ENERGY ADMIN. / U.S. EPA

PRIMARY FUNDING AMOUNT
30,000

TIME FRAME
MAR. 1976 TO MAY 1976

LOCATION
AS TYPIFIED BY N.W. COLORADO, WITH APPLICATION TO WESTERN ENERGY DEVELOPMENT AREAS

ABSTRACT
THIS PROJECT IS A MULTI-TASK BASIC ORDERING AGREEMENT. THE TASKS TO DATE INCLUDE: 1. EVALUATION OF THE IMPACT OF THE SIGNIFICANT DETERIORATION PROPOSALS UPON WESTERN SURFACE COAL MINING OPERATIONS; 2. ANALYSIS OF IMPACT OF SIGNIFICANT DETERIORATION AMENDMENTS UPON THE SITING OF MULTIPLE INDUSTRIES; 3. EVALUATION OF THE SIGNIFICANT DETERIORATION INCREMENTS WITH RESPECT TO PROPOSED SYNTHETIC FUEL PLANTS (COAL GASIFICATION AND OIL SHALE RECOVERY); 4. EVALUATION OF AN AIR QUALITY ASSESSMENT METHODOLOGY FOR POWER PLANT COAL CONVERSION. THESE STUDIES ARE IN SUPPORT OF A VARIETY OF POLICY PLANNING AND EVALUATION EFFORTS PRESENTLY UNDERWAY WITHIN FEA AND EPA. (MERPO)

REPORTS AND PUBLICATIONS
IMPACT OF SIGNIFICANT DETERIORATION PROPOSALS UPON WESTERN SURFACE COAL MINING OPERATIONS. CAN ONLY BE RELEASED BY FEA. CONTACT: MR. ROGER MORRIS, FEA, WASHINGTON, D.C.

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00000780

PROJECT TITLE
COAL DEVELOPMENT: SO2 EFFECTS ON NITROGEN FIXING SYSTEMS IN AGRICULTURAL AND NATIVE PLANT SPECIES

PROJECT NUMBER
CONTRACT NO. 31-109-38-3717

INVESTIGATORS
RICHARD P. SHERIDAN

RESEARCH INSTITUTION
UNIV. OF MONTANA, DEPT. OF BOTANY / MISSOULA, MT 59812

PRIMARY SPONSOR
U.S. ERDA, ARGONNE NATIONAL LAB.

PRIMARY FUNDING AMOUNT
6,400

TIME FRAME
OCT. 1976 TO MARCH 1977

LOCATION
MT

ABSTRACT
THE PURPOSE OF THE EXPERIMENTS WILL BE TO SUPPLY NITROGEN FIXATION BACKGROUND INFORMATION TO ERDA HEADQUARTERS. THE INFORMATION WILL BE USED TO DETERMINE THE IMPACTS OF SURFACE MINING ON SELECTED AREAS IN THE NORTHERN GREAT PLAINS. SULFUR DIOXIDE EXPERIMENTS WILL BE CONDUCTED FROM OCTOBER 1, 1976 THROUGH MARCH 31, 1977.

THE STATE OF MONTANA HAS ESTABLISHED THE FOLLOWING AMBIENT AIR STANDARDS FOR SO2: A. 0.02 PPM MAXIMUM ANNUAL AVERAGE, B. 0.10 PPM, 24 HOUR AVERAGE, NOT TO BE EXCEEDED OVER 1% OF THE DAYS IN ANY 3 MONTH PERIOD, C. 0.25 PPM NOT TO BE EXCEEDED FOR MORE THAN ONE HOUR IN ANY 4 CONSECUTIVE DAYS. EXPERIMENT 1. FUMIGATION OF SOYBEAN (KENT VARIETY), SOIL BLUE-GREENS, LICHEN (COLLEMA POLYCARPON) AND MELILOTUS SPP. WITH SO2-AIR MIXTURES AT CONCENTRATIONS BETWEEN 0 AND 5 PPM TO ESTABLISH THE SO2 NITROGEN FIXATION INHIBITION CURVE. EXPERIMENT 2. PULSED-HIGHS FUMIGATION EXPERIMENTS. FUMIGATION AT 0.02 PPM WITH 1 HOUR PULSE AT 0.25 PPM EACH 4 DAYS. PURPOSE TO EVALUATE THE IMPACT ON NITROGEN FIXATION OF SO2 REGIMES THAT FALL WITHIN THE STATE OF MONTANA STANDARDS. (MEAC)

00000781

PROJECT TITLE
EVALUATION AND ASSESSMENT OF HOUSING STOCK AND PROPOSED SOLUTION STRATEGIES FOR IDENTIFIED HOUSING PROBLEMS

INVESTIGATORS
ROY E. FRONCZYK / ROBERT E. GILTNER (THK) / DENNIS WATT (SWEETWATER CO. PLANNING DEPT.)

RESEARCH INSTITUTION
THK ASSOCIATES INC.
1601 EMERSON STREET / DENVER, CO 80218

COORDINATOR
SWEETWATER COUNTY PLANNING DEPT.
P.O. BOX 791 / GREEN RIVER, WY 82935

PRIMARY SPONSOR
SWEETWATER COUNTY PRIORITY BOARD
PETER POLETTO / P.O. BOX 632 / GREEN RIVER, WY 82935

SECONDARY SPONSOR(S)
SWEETWATER CO., WY

PRIMARY FUNDING AMOUNT
7,800

SECONDARY FUNDING AMOUNT(S)
10,000

TIME FRAME
AUG. 1976 TO DEC. 1976

STATUS
COMPLETED JAN., 1977

LOCATION
WY - SWEETWATER CO. LESS ROCK SPRINGS

ABSTRACT
INCREASING EMPLOYMENT IN ENERGY DEVELOPMENT HAS BEEN RESPONSIBLE FOR RECENT POPULATION WHICH HAS CREATED A TIGHT HOUSING MARKET. THIS PROJECT WAS UNDERTAKEN TO ACCOMPLISH THE FOLLOWING OBJECTS: 1. TO ANALYZE AND DEFINE THE HOUSING PROBLEM IN SWEETWATER COUNTY OUTSIDE OF ROCK SPRINGS; 2. TO PROVIDE LOCAL GOVERNMENTS IN SWEETWATER COUNTY WITH HOUSING INFORMATION THAT IS OFTEN REQUIRED IN STATE AND FEDERAL ASSISTANCE APPLICATIONS; 3. TO DEVELOP PROJECTIONS AS TO WHAT FUTURE HOUSING DEMANDS AND PROBLEMS WILL BE LIKE; 4. TO PROPOSE SOLUTION STRATEGIES WITH RESPECT TO EXISTING AND ANTICIPATED FUTURE HOUSING PROBLEMS; 5. TO FORMULATE HOUSING CONDITION CRITERIA ACCORDING TO WHICH HOUSING UNITS COULD BE CLASSIFIED ACCORDING TO STRUCTURAL CONDITION CHARACTERISTICS. THE STUDY APPROACH ADOPTED FOR THIS PROJECT WAS BASED ON ACQUISITION OF DATA AND INFORMATION TO ANSWER QUESTIONS SET FORTH IN THE AUTHORIZING CONTRACTS, EXCEPT FOR THE DETERMINATION OF THE HOUSING CONDITION CRITERIA. THE PRIMARY INFORMATION SOURCES WERE FIELD SURVEYS AND INTERVIEWS CONDUCTED BY THE INVESTIGATORS AND RECORDS FROM THE SWEETWATER COUNTY ASSESSORS OFFICE. SECONDARY INFORMATION SOURCES CONSISTED MAINLY OF OTHER SOCIO-ECONOMIC STUDIES AND SURVEYS CONDUCTED IN SWEETWATER COUNTY.

REPORTS AND PUBLICATIONS
THK ASSOCIATES INC. HOUSING IN SWEETWATER COUNTY. DEC. 1976.
AVAILABLE FROM: SWEETWATER COUNTY PLANNING DEPARTMENT / P.O. BOX 791 / GREEN RIVER, WY 82935 OR SWEETWATER COUNTY PRIORITY BOARD / P.O. BOX 632 / GREEN RIVER, WY 82935
COST PER COPY IS $7.50

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00000782

PROJECT TITLE
MEETING DEMANDS FOR PUBLIC SERVICES CREATED BY WATER & ENERGY RESOURCES DEVELOPMENT FINANCING PROBLEMS IN IMPACTED WYOMING COMMUNITIES

PROJECT NUMBER
C-6300

INVESTIGATORS
K. N. GRIFFIN / J. B. RICHARD

RESEARCH INSTITUTION
UNIV. OF WYOMING, DEPT. OF POLITICAL SCIENCE
P.O. BOX 3435, UNIV. STATION / LARAMIE, WY 82071

PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR, OFFICE OF WATER RESEARCH & TECH.

PRIMARY FUNDING AMOUNT
8,792

TIME FRAME
JULY 1975 TO JUNE 1976

LOCATION
WY

ABSTRACT
THE PURPOSE OF THIS PROJECT IS TO ANALYZE THE DEMANDS FOR PUBLIC SERVICES WHICH ARE CREATED IN IMPACTED COMMUNITIES DUE TO THE DEVELOPMENT OF WATER AND ENERGY RESOURCES, AND TO DEVELOP A PLAN FOR COOPERATIVE FUNDING BY LOCAL GOVERNMENT ENTITIES OF THESE SERVICES. THE OBJECTIVES INCLUDE: 1. ANALYZING PERCEIVED NEEDS FOR PUBLIC SERVICES WHICH ARE HELD BY BOTH NEW AND OLD RESIDENTS IN THREE IMPACTED WYOMING COMMUNITIES; 2. EXPLORING LOCAL OFFICIALS' ASSESSMENTS OF COMMUNITY NEEDS AND FUNDING ARRANGEMENTS FOR VARIOUS PUBLIC SERVICES; 3. ESTABLISHING CRITERIA AND DEVELOPING A COMPREHENSIVE PLAN FOR DIVIDING THE FUNDING OF REQUISITE SOCIAL SERVICES AMONG THE VARIOUS GOVERNMENTAL ENTITIES--COUNTY, MUNICIPAL, AND SPECIAL USE DISTRICTS.

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00000783
PROJECT TITLE
HUMAN VALUES AND LEISURE PURSUITS WORK-GROUP - WEST CENTRAL ND REGIONAL EIS
INVESTIGATORS
ALAN KESTERKE / BURTON WILLIAMS / DWIGHT ARAKI
RESEARCH INSTITUTION
U.S. BUREAU OF LAND MANAGEMENT / 222 N. 32ND ST. / BILLINGS, MT 59101
PRIMARY SPONSOR
U.S. BUREAU OF LAND MANAGEMENT
SECONDARY SPONSOR(S)
OLD WEST REGIONAL COMMISSION
PRIMARY FUNDING AMOUNT
600,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)
SECONDARY FUNDING AMOUNT(S)
192,000 (AMOUNT OF OVERALL EIS FUNDING; SPECIFIC SUB-PROJECT FUNDING NOT AVAILABLE)
TIME FRAME
AUG. 1976 TO MAR. 1978
LOCATION
ND - DUNN, MERCER, OLIVER, MCLEAN, BURLEIGH, MORTON, STARK COUNTIES
ABSTRACT
WORKGROUP IS RESPONSIBLE FOR DETERMINING IMPACTS OF ENERGY DEVELOPMENT IN WEST CENTRAL NORTH DAKOTA ON: 1. RECREATION; 2. HISTORY AND PREHISTORY; 3. AESTHETICS-VISUALS, SOUND, ODORS.
STUDY AFFILIATION
PART OF 'WEST CENTRAL NORTH DAKOTA ENERGY DEVELOPMENT ENVIRONMENTAL IMPACT STATEMENT,' U.S. BUREAU OF LAND MANAGEMENT AND OLD WEST REGIONAL COMMISSION, SERIAL NUMBER 00000541, ERIS PROJECTS LISTING, VOL. 2, NO. 1, JANUARY, 1977.
REPORTS AND PUBLICATIONS
DRAFT EIS SCHEDULED FOR COMPLETION SEPT., 1977. FINAL EIS SCHEDULED FOR COMPLETION MAR., 1978. AVAILABLE FROM BLM, BILLINGS, MT

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00000784
PROJECT TITLE
ARCHAEOLOGICAL SERVICES, PACIFIC POWER AND LIGHT COMPANY LANDS, DECKER, MONTANA
PROJECT NUMBER
726-6, 729-1, 729-2
INVESTIGATORS
DEE C. TAYLOR
RESEARCH INSTITUTION
UNIV. OF MONTANA, DEPT. OF ANTHROPOLOGY
MISSOULA, MT 59801
PRIMARY SPONSOR
VTN COLORADO, INC. / 2600 PARKER RD / PARKER PLACE FOUR / DENVER, CO 80232
PRIMARY FUNDING AMOUNT
14,258
TIME FRAME
JULY 1976 TO JAN. 1977
LOCATION
MT
ABSTRACT
THE ARCHAEOLOGICAL SERVICES IS DIVIDED INTO THREE PHASES: 1. SURVEY; INVENTORY, ENUMERATION AND DESCRIPTION OF ARCHAEOLOGICAL SITES; COLLECTION OF SURFACE CULTURAL MATERIALS WITH LIMITED SUBSURFACE TESTING. FOLLOWED BY ANALYSIS OF SITES AND RECOMMENDATIONS FOR TESTING. 2. TESTING. ON THE BASIS OF (1) AND PLANNED MINING ACTIVITIES SOME SITES ARE SELECTED FOR SUB-SURFACE TESTING TO DETERMINE THE NATURE AND EXTENT OF CULTURAL MATERIALS PRESENT. AGAIN FOLLOWED BY ANALYSIS AND RECOMMENDATIONS. 3. EXCAVATION OF SELECTED SITES IF THEY CANNOT BE PRESERVED. COMPLETE DESTRUCTION AND ATTEMPT TO RECOVER ALL CULTURAL DATA. FOLLOWED BY DETAILED REPORTS. (MEAC)

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00000785
PROJECT TITLE
ARCHAEOLOGICAL STUDY OF WHITE BUFFALO ROBE VILLAGE
PROJECT NUMBER
R803C15380
INVESTIGATORS
L. L. LOENDORF
RESEARCH INSTITUTION
UNIV. OF NORTH DAKOTA, DEPT. OF ANTHROPOLOGY & ARCHAEOLOGY
UNIV. STATION / GRAND FORKS, ND 58202
PRIMARY SPONSOR
STEARNS-ROGER, INC.
PRIMARY FUNDING AMOUNT
9,234
TIME FRAME
JULY 1976 TO JAN. 1977
LOCATION
ND - SOUTH OF STANTON
ABSTRACT
OBJECTIVE: TO SALVAGE EXCAVATE THOSE PORTIONS OF WHITE BUFFALO ROBE VILLAGE WHICH WILL BE DESTROYED BY THE

WATER ACQUISITION PIPE FOR THE COYOTE STATION ELECTRICAL PLANT.
METHODOLOGY: STANDARD FIELD TECHNIQUES WITH USE OF HEAVY EQUIPMENT PRIOR TO ACTUAL CONSTRUCTION TO EXPOSE ARCHAEOLOGICAL FEATURES.
APPLICATION OF WORK: PRIMARILY THIS WORK WILL SATISFY THE REQUIREMENTS OF STATE AND FEDERAL GOVERNMENTS FOR HISTORIC PRESERVATION.

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00000786

PROJECT TITLE

ANALYSIS OF THE IMPACT OF ENERGY DEVELOPMENT ON THE PUBLIC AND PRIVATE SECTORS OF WYOMING'S ECONOMY

PROJECT NUMBER

0068701

INVESTIGATORS

C. E. OLSON

RESEARCH INSTITUTION

UNIV. OF WYOMING, AG. EXP. STATION / P.O. BOX 3354,
UNIVERSITY STATION / LARAMIE, WY 82071

PRIMARY SPONSOR

WYOMING STATE GOVERNMENT

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

WY

ABSTRACT

OBJECTIVE: ANALYZE THE EFFECTS OF COAL-BASED GROWTH IN WYOMING'S POWDER BASIN ON REGIONAL ECONOMIC COSTS AND BENEFITS, DISTRIBUTION OF COSTS AND BENEFITS BETWEEN PUBLIC AND PRIVATE SECTORS. PREDEVELOPMENT RESIDENTS. DETERMINE INSTITUTIONAL PROBLEMS ASSOCIATED WITH GROWTH OF ENERGY AND STRATEGIES THAT WILL HELP SOLVE SUCH PROBLEMS.
APPROACH: AN ANALYTICAL TECHNIQUE APPROPRIATE FOR ASSESSING THE CHANGES IN ECONOMIC WELL BEING CAUSED BY CHANGES IN ECONOMIC ACTIVITY WILL BE UTILIZED. OBJECTIVE I WILL BE ACCOMPLISHED BY EXAMINING THE AREA AND PEOPLE AFFECTED AT THREE TIME PERIODS--PREDEVELOPMENT: START-UP PHASE OF DEVELOPMENT, AND AFTER DEVELOPMENT IS ESTABLISHED. OBJECTIVE 2 STRATEGIES AFFECT RESIDENTS DURING THE SECOND AND THIRD PHASES.
PROGRESS: MUCH PRELIMINARY WORK HAS BEEN DONE. A M.S. THESIS HAS BEEN STARTED DEALING WITH THE IMPACT OF RISING WAGE RATES CAUSED BY ENERGY DEVELOPMENT ON PRODUCTION AGRICULTURE. A PAPER ENTITLED 'EFFECTS OF ENERGY DEVELOPMENT ON AGRICULTURE AND RURAL COMMUNITIES IN THE WEST' WAS CO-AUTHORED FOR THE WESTERN GOVERNOR'S CONFERENCE ON AGRICULTURE AND ENERGY.

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00000787

PROJECT TITLE

DEVELOPING ECONOMIC IMPACT PROJECTION MODELS FOR THE FORT UNION COAL REGION

PROJECT NUMBER

68-01-3507

INVESTIGATORS

T. A. HERTSGAARD / F. L. LEISTRITZ / N. L. DALSTED / A. G. LEHOL

RESEARCH INSTITUTION

NORTH DAKOTA STATE UNIV., DEPT. OF AGRICULTURAL ECONOMICS
FARGO, ND 58102

PRIMARY SPONSOR

U.S. EPA, OFFICE OF RESEARCH & DEV.

TIME FRAME

JULY 1975 TO DEC. 1975

LOCATION

ND MT WY

ABSTRACT

PHASE I: 1. OBJECTIVE: TO INVESTIGATE THE USEFULNESS OF INPUT-OUTPUT COEFFICIENTS DEVELOPED FOR NORTH DAKOTA IN DESCRIBING INTER-INDUSTRY RELATIONSHIPS IN THE COAL DEVELOPMENT IMPACT AREAS OF EASTERN MONTANA AND NORTHEASTERN WYOMING. 2. APPROACH: INPUT-OUTPUT TECHNICAL COEFFICIENTS WILL BE ESTIMATED FOR FOUR SECTORS (PETROLEUM EXTRACTION, PETROLEUM REFINING, COAL EXTRACTION, AND COAL-FIRED ELECTRIC POWER GENERATION). THESE SECTORS WILL BE ADDED TO THE MATRIX OF TECHNICAL COEFFICIENTS PREVIOUSLY ESTIMATED FOR OTHER SECTORS AND THE AUGUMENTED MATRIX WILL BE INVERTED TO OBTAIN AN INTERDEPENDENCE COEFFICIENTS MATRIX. SECONDARY SOURCES WILL BE UTILIZED TO ESTIMATE FINAL DEMAND VECTORS FOR THE FORT UNION AREAS OF MONTANA AND WYOMING. INTERDEPENDENCE COEFFICIENTS WILL BE APPLIED TO THE FINAL DEMAND VECTORS AND THE RESULTING ESTIMATES OF PERSONAL INCOME WILL BE COMPARED WITH THOSE REPORTED BY THE U.S. DEPARTMENT OF COMMERCE. IF THE COMPARISON IS SATISFACTORY, PHASE III CAN BE INITIATED--OTHERWISE PHASE II CAN BE INITIATED.
PHASE II: MODIFY INPUT-OUTPUT TABLES TO OBTAIN COEFFICIENTS WHICH MORE ACCURATELY DEPICT INTER-INDUSTRY RELATIONSHIPS IN THE FORT UNION COAL IMPACT AREAS.
PHASE III: EMPLOY THE INPUT-OUTPUT MODEL TO ASSESS THE POTENTIAL EFFECTS OF COAL DEVELOPMENT IN THE FORT UNION REGION.

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00000788

PROJECT TITLE

ENERGY REQUIREMENTS FOR VARIOUS SECTORS OF THE ECONOMY

INVESTIGATORS

DR. JAMES JOY

RESEARCH INSTITUTION

UNIV. OF NEBRASKA AT OMAHA, DEPT. OF ECONOMICS / OMAHA, NE

PRIMARY SPONSOR

UNIV. OF NEBRASKA AT OMAHA, DEPT. OF ECONOMICS

PRIMARY FUNDING AMOUNT

40

TIME FRAME

JAN. 1975 TO JUNE 1975

LOCATION

NE

ABSTRACT

USING 80 SECTOR INPUT-OUTPUT MODEL FOR THE AMERICAN (1963), THE BTU'S REQUIRED FOR AN EXTRA DOLLAR'S WORTH OF OUTPUT FOR EACH INDUSTRY SECTOR WAS CALCULATED. THE PURPOSE OF THE PROJECT WAS TO DEVELOP AN ENERGY ACCOUNTING SCHEME FOR AMERICAN INDUSTRY, TO RAND INDUSTRIES IN TERMS OF ENERGY INTENSIVENESS, TO SEE WHETHER AMERICAN ECONOMIC GROWTH IS 'ENERGY BIASED,' AND TO SEE WHAT THE ENERGY CONTENT OF U.S. EXPORTS AND IMPORTS IS. A TABLE PRESENTING THE COAL BTU REQUIREMENT, OIL BTU REQUIREMENT, AND TOTAL BTU REQUIREMENT WAS DEVELOPED. NEITHER ECONOMIC GROWTH NOR TRADE CHANGES WERE CORRELATED WITH ENERGY INTENSIVENESS.

REPORTS AND PUBLICATIONS

THE ENERGY STRUCTURE OF AMERICAN PRODUCTION AND TRADE. PAPER PRESENTED TO THE WESTERN ECONOMIC ASSOCIATION. JUNE 1975. AN ENERGY CLASSIFICATION SCHEME FOR AMERICAN INDUSTRY. OMAHA BUSINESS REVIEW. SPRING 1975.

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00000789

PROJECT TITLE

ERDA QUICK RESPONSE SOCIOECONOMIC ANALYSIS AND SUPPORT-TASK I

INVESTIGATORS

JOHN S. GILMORE / KEITH D. MOORE / DIANE HAMMOND / DONA FLORY

RESEARCH INSTITUTION

DENVER RESEARCH INSTITUTE, INDUSTRIAL ECONOMICS DIVISION / 2135 E. WESLEY AVE. / DENVER, CO 80210

PRIMARY SPONSOR

U.S. ERDA

PRIMARY FUNDING AMOUNT

35,089

TIME FRAME

JAN. 1977 TO SEPT. 1977

LOCATION

MONTANA - 5 OR 6 OTHER STATES

ABSTRACT

COMPARISON OF IMPACT MITIGATION MECHANISMS OF SEVERAL STATES (ONE EACH FROM ROCKY MOUNTAINS, APPALACHIA, MIDWEST, OCS STATES, ETC.), AND THEIR POSSIBLE EFFECTS ON ENERGY RESOURCE DEVELOPMENT. (HERPO)

REPORTS AND PUBLICATIONS

REPORT TO ERDA-APAE

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00000790

PROJECT TITLE

COMPILATION OF RAW DATA ON ENERGY-IMPACTED COMMUNITIES

INVESTIGATORS

DR. POLLY GARRETT / MRS. CANDIS WEBB

RESEARCH INSTITUTION

U.S. FEDERAL ENERGY ADMIN.
P.O. BOX 20247, 1075 SO. YUKON, / LAKEWOOD, CO 80226

PRIMARY SPONSOR

U.S. FEDERAL ENERGY ADMIN.

PRIMARY FUNDING AMOUNT

INHOUSE PROJECT - FUNDING NOT SPECIFIED.

TIME FRAME

DEC. 1975 TO CONTINUING

LOCATION

ENERGY IMPACTED COMMUNITIES IN REGION VIII (CO, MT, ND, SD, UT, WY)

ABSTRACT

THIS ANNUAL FRC REPORT LISTS COMMUNITIES IN COLORADO, MONTANA, NORTH AND SOUTH DAKOTA, UTAH AND WYOMING THAT ARE BEING, OR EXPECT TO BE IMPACTED BY ENERGY DEVELOPMENT. SOCIO-ECONOMIC DATA IS DEVELOPED IN COOPERATION WITH STATES AND INCLUDED IN THE ANNUAL REPORT. THIS DATA INCLUDES HOUSING, SCHOOLS, POPULATION, HEALTH FACILITIES, PLANNING ASSISTANCE AND GROWTH RELATED PROBLEMS. (MEAC)

REPORTS AND PUBLICATIONS

COMPILATION OF RAW DATA ON ENERGY IMPACTED COMMUNITIES, INCLUDING CHARACTERISTICS, CONDITIONS, RESOURCES, AND STRUCTURES FOR COLORADO, MONTANA, NORTH DAKOTA, SOUTH DAKOTA, UTAH, AND WYOMING. JUNE 1976. AVAILABLE FROM MOUNTAIN PLAINS FEDERAL REGIONAL COUNCIL, 1961 STOUT STREET, ROOM 14037, DENVER, CO 80294. ANNUAL PUBLICATION WILL BE ISSUED BY THE FEDERAL ENERGY ADMINISTRATI

00000791
PROJECT TITLE
IN-SITU COAL GASIFICATION (MODELING)
PROJECT NUMBER
RP542
RESEARCH INSTITUTION
UNIV. OF WYOMING
LARAMIE, WY
PRIMARY SPONSOR
ELECTRIC POWER RESEARCH INSTITUTE
3412 HILLVIEW AVE / PALO ALTO, CA 94303
PRIMARY FUNDING AMOUNT
147,200
TIME FRAME
JUNE 1975 TO JUNE 1978
LOCATION
WY
ABSTRACT

THE PURPOSE OF THIS PROJECT IS TO PERFORM A SYSTEMATIC EVALUATION OF IN-SITU COAL GASIFICATION PROCESSES IN ORDER TO IDENTIFY WAYS AND MEANS TO PROVIDE AN ALTERNATIVE TO MINING FOR THE RECOVERY OF ENERGY VALUES FROM CERTAIN COAL SEAMS. THE PROJECT WILL INCLUDE CLOSE WORKING RELATIONS WITH THE BUREAU OF MINES IN-SITU GASIFICATION FIELD TESTS NEAR HANNA, WYOMING. THE PROJECT WILL ANALYZE THE BUREAU OF MINES DATA, WITH THE OBJECTIVE OF REPLACING HISTORICAL TRIAL-AND-ERROR ATTEMPTS AT IN-SITU GASIFICATION WITH QUANTITATIVE ENGINEERING ASSESSMENTS AND PREDICTIONS OF PROBABLE ECONOMIC FEASIBILITY FOR THE UTILITY INDUSTRY. THIS PROJECT IS DIVIDED INTO TWO PHASES. PHASES I WILL EMPHASIZE FIELD TEST LIASION, TOGETHER WITH THEORETICAL STUDIES, PARAMETER STUDIES, AND ANALYSIS OF NEW DEVELOPMENTS. PHASE II WILL EXTEND THE WORK BEGUN IN THE INITIAL PHASE, AND WILL EMPHASIZE EXTENSIVE ANALYSIS OF FIELD TEST DATA. IT WILL ENTAIL STANDARDIZATION OF DESIGN METHODS AND SPECIFICATION OF PROCESS PARAMETERS AND CONDITIONS.

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00000792
PROJECT TITLE
SLAG PHYSICAL PROPERTIES: ELECTRICAL AND THERMIONIC CONDUCTIVITY AND VISCOSITY
PROJECT NUMBER
G&C 311
INVESTIGATORS
RICHARD J. POLLINA
RESEARCH INSTITUTION
MONTANA STATE UNIV., DEPT. OF PHYSICS
BOZEMAN, MT 59715
PRIMARY SPONSOR
U.S. ERDA
PRIMARY FUNDING AMOUNT
85,000
TIME FRAME
OCT. 1976 TO SEPT. 1977
LOCATION
MT
ABSTRACT

THE PRESENCE OF COAL SLAG IN MHD CHANNELS AND PERHAPS IN HEAT EXCHANGERS IS AN UNAVOIDABLE, AND IN SOME WAYS DESIRABLE, ASPECT OF COAL-FIRED MHD POWER GENERATION. PROPER DESIGN OF SUCH MHD SYSTEMS MUST TAKE THE MECHANICAL, ELECTRICAL, AND CHEMICAL PROPERTIES OF SLAG INTO ACCOUNT. COAL SLAG CAN HAVE A GREAT VARIETY OF PROPERTIES, WHICH DEPEND UPON COAL COMPOSITION, AMOUNT AND TYPE OF SEED AND OTHER ADDITIVES, COMBUSTOR AND CHANNEL CONDITIONS, TEMPERATURE, AND INTERACTION WITH VAPOR COMPONENTS IN THE PLASMA STREAM. THIS TASK IS DIRECTED TOWARD DETERMINATION OF THREE TYPES OF KINETIC OR TRANSPORT PROPERTIES OF COAL SLAG UNDER ISOTHERMAL CONDITIONS: 1. ELECTRICAL CONDUCTIVITY; 2. THERMAL CNDUCTIVITY; 3. VISCOSITY.

INITIAL MEASUREMENTS ARE PLANNED FOR TEMPERATURES UP TO 1800 DEGREES C BECAUSE MANY PROBLEMS ARE ASSOCIATED WITH THE EVENTUAL GOAL OF MAKING MEASUREMENTS AT 2200 DEGREES C.

BOTH THE ELECTRICAL CONDUCTIVITY AND VISCOSITY EXPERIMENTAL SYSTEMS ARE BASED ON METHODS WHICH THE U.S. NATIONAL BUREAU OF STANDARDS HAS FOUND TO BE SUCCESSFUL WITH COAL SLAG. (MEAC)

STUDY AFFILIATION

RELATED WORK ON SLAG PHYSICAL PROPERTIES IS UNDER WAY AT THE U.S. NATIONAL BUREAU OF STANDARDS AT GAITHERSBURG, MARYLAND, AND AT BATTELLE NORTHWEST IN RICHLAND, WASHINGTON. THIS WORK IS BEING COORDINATED WITH THAT OF THESE LABORATORIES. EMPHASIS IN THIS PROGRAM WILL BE ON SLAG FROM MONTANA COAL, WITH VARIOUS SEED CONCENTRATIONS. WITHIN THE MSU PROGRAM, OUR WORK IS BEING COORDINATED WITH TASK E, 'SLAG FLOW AND NOX KINETICS,' SERIAL NUMBER 00000371, ERIS QUARTERLY REPORT, VOL. I, NO. 2, FEBRUARY, 1976, AND TASK F, 'SLAG-SEED EQUILIBRIUM AND SEPARATION RELATED TO THE MHD SYSTEMS,' SERIAL NUMBER 00000373, ERIS QUARTERLY REPORT, VOL. I, NO. 2, FEBRUARY, 1976. WITHIN THE MERDI PROGRAM OUR WORK IS BEING COORDINATED WITH TASK A (CHARACTERIZATION OF COAL) AND TASK B (CORROSION STUDIES OF MHD PREHEATER MATERIALS).

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00000793

PROJECT TITLE

DIRECT BURNING OF COAL BY MONTANA INDUSTRY

INVESTIGATORS

JOHN MCBRIDE

RESEARCH INSTITUTION

MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.
BUTTE, MT 59701

PRIMARY SPONSOR

MONTANA ENERGY ADVISORY COUNCIL

PRIMARY FUNDING AMOUNT

300

TIME FRAME

JULY 1976 TO JAN. 1977

LOCATION

MT

ABSTRACT

WITH THE IMPENDING SHORTAGE OF NATURAL GAS, THE OPTION OF REPLACING GAS WITH COAL MUST BE EXAMINED. THIS IS PARTICULARLY THE CASE WITH INDUSTRIAL GAS USE IN MONTANA. (MEAC)

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'COST/DEMAND ANALYSIS,' MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST., SERIAL NUMBER 00000656, ERIS PROJECTS REPORT, VOL. 2, NO. 1, JANUARY, 1977.

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00000794

PROJECT TITLE

FLY ASH ANALYSIS USING THE MSU ION BEAM/VAN DE GRAAFF ANALYSIS LABORATORY

PROJECT NUMBER

258

INVESTIGATORS

WENDLAND BEEZHOLD

RESEARCH INSTITUTION

MONTANA STATE UNIV., MHD ENERGY RESEARCH
BOZEMAN, MT 59715

PRIMARY SPONSOR

U.S. ERDA, BATTELLE PACIFIC NW LAB. / BATTELLE BOULEVARD / P.O. BOX 999 / RICHLAND, WA 99352

PRIMARY FUNDING AMOUNT

5,000

TIME FRAME

NOV. 1976 TO JAN. 1977

LOCATION

MT

ABSTRACT

DEPTH PROFILES FOR THE ELEMENTS TI, ZN, PB, CR, CU, HG, AND V ARE TO BE OBTAINED IN FOUR FLY ASH SAMPLES, EACH HAVING A DIFFERENT FLY ASH PARTICLE SIZE DISTRIBUTION. THE TECHNIQUES TO BE USED INCLUDE PROTON-INDUCED X-RAY (PIX) AND RUTHERFORD BACKSCATTERING (RBS) ANALYSIS. (MEAC)

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00000795

PROJECT TITLE

LOW-BTU GASIFICATION OF COAL FOR MONTANA APPLICATIONS

INVESTIGATORS

JOHN MCBRIDE

RESEARCH INSTITUTION

MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.
BUTTE, MT 59701

PRIMARY SPONSOR

MONTANA ENERGY ADVISORY COUNCIL / POWER BLOCK /
HELENA, MT 59601

PRIMARY FUNDING AMOUNT

500

TIME FRAME

JULY 1976 TO JAN. 1977

LOCATION

MT

ABSTRACT

THE PURPOSE OF THIS PROJECT WAS TO ASSEMBLE AN ANNOTATED BIBLIOGRAPHY OF RECENT LITERATURE RELATED TO LOW-BTU GASIFICATION SO THAT INTERESTED RESEARCHERS MIGHT HAVE EASIER ACCESS TO THE TECHNOLOGY OF LOW-BTU GASIFICATION.

STUDY AFFILIATION

PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL

REPORTS AND PUBLICATIONS

JOHN R. MCBRIDE. LOW-BTU GASIFICATION: AN ANNOTATED BIBLIOGRAPHY OF THE TECHNOLOGY. JANUARY 1977.

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00000796

PROJECT TITLE

ENERGY CONVERSION STUDY

INVESTIGATORS

JAMES H. NYBO

RESEARCH INSTITUTION

MONTANA ENERGY ADVISORY COUNCIL / POWER BLOCK /
HELENA, MT 59601

COOPERATOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION /

MONTANA DEPT. OF COMMUNITY AFFAIRS / MOUNTAIN WEST RESEARCH, INC. / MONTANA CITIZEN'S ADVISORY COMMITTEE ON ENERGY / ALTERNATIVE ENERGY RESOURCES ORGANIZATION
PRIMARY SPONSOR
MONTANA ENERGY ADVISORY COUNCIL
PRIMARY FUNDING AMOUNT
3,500
TIME FRAME
DEC. 1975 TO JAN. 1977
LOCATION
MT
ABSTRACT
HB 453 CALLED FOR THE DEVELOPMENT OF A COMPREHENSIVE ENERGY CONVERSION POLICY AND PLAN. THIS PROJECT INCLUDES THE SPECIFICATION OF THE FULL RANGE OF ENERGY CONVERSION ALTERNATIVES AVAILABLE TO THE CITIZENS OF THE STATE OF MONTANA AND DEVELOPS AND ASSEMBLES INFORMATION PERTINENT TO THE IMPLICATIONS FOR THEIR APPLICATION IN MONTANA. (MEAC)
STUDY AFFILIATION
PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL.
REPORTS AND PUBLICATIONS
ENERGY CONVERSION: OPTIONS AND IMPLICATIONS. JANUARY 1977.

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00000797
PROJECT TITLE
SCRUBBER DEVELOPMENT PROGRAM-DAVE JOHNSTON STEAM ELECTRIC PLANT, UNIT 4
INVESTIGATORS
P. W. KOBETT / D. H. EISENLOHR
RESEARCH INSTITUTION
PACIFIC POWER & LIGHT CO. / GLENROCK, WY 82637
COOPERATOR
CHEMICAL CONSTRUCTION CORP.
CHEMICO AIR POLLUTION CONTROL CO.
PRIMARY SPONSOR
PACIFIC POWER & LIGHT CO.
TIME FRAME
JULY 1974 TO DEC. 1975
LOCATION
WY
ABSTRACT
THE DAVE JOHNSTON STEAM ELECTRIC PLANT-UNIT 4 WAS PLACED IN COMMERCIAL OPERATION JULY 1, 1972. FLUE GAS FROM THE COAL-FIRED BOILER IS PROCESSED FOR PARTICULATE REMOVAL IN THREE PARALLEL, VENTURI, WET SCRUBBER SYSTEMS. THE PURPOSE OF THE SCRUBBER DEVELOPMENT PROGRAM IS TO DETERMINE THE MOST FEASIBLE METHODS FOR THE ELIMINATION OF UNACCEPTABLE SCALING PROBLEMS, ASH BUILD-UP, VALVE FAILURES, PUMP IMPELLOR WEAR, AND OTHER CONTROL PROBLEMS. THE PROGRAM TO DATE HAS BEEN DIRECTED TOWARD REDUCING SCALE FORMATION BY THE ADDITION OF LIME. THE STUDIES PLANNED FOR 1975 INCLUDE ADDITION OF OTHER CHEMICALS.

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00000798
PROJECT TITLE
RESEARCH IN SUPPORT OF THE CONSOLIDATION COAL LIGNITE GASIFICATION PLANT AT RAPID CITY
INVESTIGATORS
J. A. REDOEN
RESEARCH INSTITUTION
SOUTH DAKOTA SCHOOL OF MINES & TECH., ENG. & MINING EXP. STATION / RAPID CITY, SD 57701
PRIMARY SPONSOR
FARMLAND INDUSTRIES INC.
PRIMARY FUNDING AMOUNT
1974 - 95,000 / 1975 - 96,000
TIME FRAME
JULY 1974 TO JUNE 1976
LOCATION
SD
ABSTRACT
PROJECT INCLUDES RESEARCH ON CARBONATE ROCK RESOURCES, CARBON DIOXIDE ACCEPTOR RECONSTITUTION, CORROSION RATES IN LIME MELTS, TRACE ELEMENTS IN LIGNITE, SULFUR STUDIES IN LIGNITE, CARBONATE GRINDING PROPERTIES, AND WASTE MONITORING AT THE GASIFICATION PLANT AT RAPID CITY, SOUTH DAKOTA.
STUDY AFFILIATION
THIS PROJECT IS RELATED TO 'WASTE MONITORING AT THE RAPID CITY GASIFICATION PLANT,' SERIAL NUMBER 00000222, ERIS QUARTERLY REPORT, VOL. 1, NO. 1, NOVEMBER, 1975.

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00000799
PROJECT TITLE
ELECTROSTATIC PRECIPITATOR PERFORMANCE ON WESTERN COAL
INVESTIGATORS
W. S. KANE / E. GERLICH
RESEARCH INSTITUTION
IOWA PUBLIC SERVICE CO. / SIOUX CITY, IA 51101
PRIMARY SPONSOR
IOWA PUBLIC SERVICE CO.
PRIMARY FUNDING AMOUNT
1975 - 25,000
TIME FRAME
JULY 1974 TO DEC. 1975

LOCATION
WY IA
ABSTRACT
TEST BURNING OF WYOMING COALS TO DETERMINE PRECIPITATOR PERFORMANCE. ALSO INCLUDES PRECIPITATOR PERFORMANCE ON CYCLONE FIRED BOILER (HOT GAS).

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00000800
PROJECT TITLE
COMPUTER SIMULATION AND ECONOMIC OPTIMIZATION OF UNDERGROUND GASIFICATION OF COAL
INVESTIGATORS
S. M. FAROUQALI
RESEARCH INSTITUTION
PENNSYLVANIA STATE UNIV., DEPT. OF MINERAL ENG. /
201 SHIELDS BLDG. / UNIVERSITY PARK, PA 16802
PRIMARY SPONSOR
U.S. BUREAU OF MINES
TIME FRAME
JAN. 1976 TO DEC. 1976
LOCATION
WY
ABSTRACT
THE RESEARCH IS DESIGNED TO DEVELOP MATHEMATICAL MODELS OF INCREASING COMPLEXITY FOR SIMULATING THE UNDERGROUND GASIFICATION OF COAL. IT IS INTENDED TO USE THESE MODELS TO SIMULATE THE PREVIOUSLY PUBLISHED FIELD TEST RESULTS, AND ALSO TO MONITOR THE CURRENT USBM UNDERGROUND GASIFICATION TEST IN WYOMING.

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00000801
PROJECT TITLE
SILICA REMOVAL FROM COOLING TOWER MAKE-UP
RESEARCH INSTITUTION
BURNS & MCDONNELL / P.O. BOX 173 /
KANSAS CITY, MO 64141
ENVIROTECH, INC.
COOPERATOR
LINCOLN ELECTRIC SYSTEM / HEARTLAND CONSUMERS POWER DISTRICT / TRI-STATE G&T / MISSOURI BASIN MUNICIPAL POWER AGENCY / WYOMING MUNICIPAL POWER AGENCY
PRIMARY SPONSOR
BASIN ELECTRIC POWER COOPERATIVE / DOUGLAS R. POWELL /
316 N. 5TH ST. / BISMARCK, ND 58501
PRIMARY FUNDING AMOUNT
111,471
TIME FRAME
SEPT. 1975 TO NOV. 1975
LOCATION
WY
ABSTRACT
DESCRIPTION: THIS PILOT STUDY WAS CONDUCTED BY BASIN ELECTRIC POWER COOPERATIVE FOR THE MISSOURI BASIN POWER PROJECT TO DETERMINE THE FEASIBILITY OF COLD WATER SILICA REMOVAL FROM COOLING TOWER MAKE-UP FOR THREE 500 MW COAL FIRED UTILITY POWER PLANTS. IT IS NECESSARY TO REDUCE SILICA FROM 30 PPM TO 8 PPM IN ORDER TO ACHIEVE 15 CONCENTRATIONS IN THE COOLING TOWERS WITHOUT SILICA PLATE OUT IN THE CONDENSER TUBES. THE PROCESS UTILIZES A SLUDGE CONTACT REACTOR CLARIFIER. VARIOUS CHEMICAL TREATMENTS WERE STUDIED TO DETERMINE THE OPTIMUM CONDITION REQUIRED FOR SILICA REMOVAL. OF PARTICULAR INTEREST ARE PH, PERCENT OF SOLIDS BEING CARRIED IN THE REACTION ZONE, CALCIUM HARDNESS OF TREATED WATER, TURBINE SPEED AND REACTION ZONE CONTACT TIME. THE SOURCE OF MAKE-UP WATER IS THE LARAMIE RIVER IN WYOMING.
REPORTS AND PUBLICATIONS
BURNS & MCDONNELL ENGINEERING CO.
A STUDY OF FRONT-END WATER TREATMENT FOR THE LARAMIE RIVER STATION, MISSOURI BASIN POWER PROJECT.

00000802
PROJECT TITLE
GEOLOGY AND GEOCHEMISTRY OF HUMATES AND COAL
PROJECT NUMBER
9420-00106
INVESTIGATORS
V. E. SWANSON
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY
DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY, 1974 TO JUNE 1975
LOCATION
ENTIRE U.S. - TO DATE, PARTICULARLY FL, ND, WY, AND NM
ABSTRACT

A TOPICAL STUDY DESIGNED TO: 1. CLOSE TO THE GAP BETWEEN DETAILED CHEMICAL AND PETROGRAPHIC KNOWLEDGE OF ORGANIC MATERIALS, AND THE ABUNDANT DATA ON MANY METALS KNOWN TO BE CONCENTRATED BY OR ASSOCIATED WITH CARBONACEOUS MATERIALS IN ROCKS. 2. ESTABLISH DATA BANK ON COMPOSITION OF COAL BEDS IN THE UNITED STATES, PARTICULARLY THEIR TRACE-ELEMENT CONTENTS, FOR DAY-TO-DAY USE IN ENVIRONMENTAL STUDIES. 3. DEFINE THE BIOLOGICAL AND BIOCHEMCIAL SOURCE MATERIALS OF HUMATES; DETERMINE THE PROCESSES OF MOBILIZING, TRANSPORTING, AND PRECIPITATING HUMATES; AND EVALUATE THE ROLE OF HUMATES IN THE INITIAL OR SECONDARY ENRICHMENT OF METALS IN ROCKS. 4. DETERMINE PRECISELY THE MAXIMUM AMOUNTS OF METALS THAT ARE COMPLEXED AND RETAINED IN HUMATES WHICH ARE DEPOSITED IN SEDIMENTS, AND THE NATURAL CHEMICAL PARAMETERS CONTROLLING THEIR DEPOSITION AND PRESERVATION; INCLUDES SPECIFICALLY ANALYTICAL STUDIES AND COMPILATION OF ANALYSES OF TRACE ELEMENTS IN U.S. COALS. 5. DETERMINE THE GENERAL DISTRIBUTION, APPROXIMATE TONNAGES, LITHOLOGIC ASSOCIATION, AND STRATIGRAPHIC RELATIONS OF HUMATE DEPOSITS - FOR EXAMPLE, HUMATE SANDS IN NORTHWEST FLORIDA AND EASTERN SOUTH CAROLINA, AND LEONARDITE IN WYOMING, NORTH DAKOTA, AND NEW MEXICO.

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00000803
PROJECT TITLE
GEOLOGY AND COAL RESOURCES OF THE COYOTE DRAW, GAP, APPEL BUTTE, AND 4J-RANCH QUADRANGLES, WYOMING
PROJECT NUMBER
9C49-FM73
INVESTIGATORS
G. L. GALYARDT
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY
ABSTRACT

TO FIELD CHECK BOTH THE COYOTE DRAW AND GAP QUADRANGLES, FIELD CHECKING WILL ALLOW TIME TO DELINEATE AREAS OF PLEISTOCENE WINDBLOWN SAND AND ALLUVIUM. ALSO, THE BASE OF THE 'GILLETTE GRIT' (INFORMAL NAME) WILL BE MAPPED. RECENT DRILLING ACTIVITY WILL BE CORRELATED WITH AREAS OF POOR OUTCROP TO IMPROVE COAL BED CONTROL. THE APPEL BUTTE AND 4J-RANCH QUADRANGLES WILL BE SUBMITTED FOR TECHNICAL REVIEW PRIOR TO OPEN-FILE RELEASES.

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00000804
PROJECT TITLE
SPRING GULCH QUADRANGLE
PROJECT NUMBER
9C63-75
INVESTIGATORS
N. E. MICKLICH
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / P.O. BOX 2373
CASPER, WY 82502
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
MT
ABSTRACT

EVALUATE COAL DEPOSITS, ESTABLISH OR REVISE KNOWN COAL LEASING AREAS, AND ACQUIRE COAL RESOURCE DATA NEEDED FOR COAL RESOURCE OCCURRENCE MAPS AND COAL RESOURCE DEVELOPMENT POTENTIAL; PROVIDE COAL RESOURCE DATA TO ESTABLISH MINIMUM ACCEPTABLE BONUS BIDS, CALCULATE ADVANCE ROYALTIES, AND OUTLINE PROSPECTIVE LEASE BLOCKS AND LOGICAL MINING UNITS; PROVIDE GEOLOGIC DATA FOR PROBABLE SITE SPECIFIC ENVIRONMENTAL ANALYSIS OR IMPACT STATEMENTS; TO ACCUMULATE DATA CONCERNING COAL DEPOSITS TO SUPPORT FOR BLM'S COAL LEASING PROGRAM AND TO PROVIDE BASIC DATA AND IDENTIFICATION AND UPDATING OF LEASABLE MINERAL RESOURCE POTENTIAL OF FEDERAL LANDS FOR

RETENTION - DISPOSAL AND MULTIPLE USE CLASSIFICATION (1:250,000 LEASABLE MINERAL AND WATERPOWER CLASSIFICATION MAPS).

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00000805
PROJECT TITLE
GEOLOGY AND ENERGY RESOURCES OF THE RAWLINS (LITTLE SNAKE RIVER) COAL FIELD, WYOMING AND COLORADO
PROJECT NUMBER
9C82-75
INVESTIGATORS
C. S. BARCLAY
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BOX 25046,
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY CO
ABSTRACT

GEOLOGIC FIELD MAPPING AND A COAL-DRILLING PROGRAM BEGUN IN JULY 1975, IN THE LITTLE SNAKE RIVER COAL FIELD, WYOMING AND COLORADO, WILL BE CONTINUED. THOSE PARTS OF THE PROJECT AREA THAT WILL RECEIVE FIRST PRIORITY ARE THE DOTY MOUNTAIN QUADRANGLE AND THE FILLMORE RANCH QUADRANGLE. PRELIMINARY GEOLOGIC MAPS OF THE FOLLOWING 7 1/2' QUADRANGLES ARE PLANNED FOR RELEASE IN OPEN-FILE BY 7-1-76: TULLIS, WYOMING; BROWNS HILL, WYOMING; KETCHUM BUTTES, WYOMING; SEAVERSON RESERVOIR, WYOMING; SAVERY, WYOMING-COLORADO.

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00000806
PROJECT TITLE
COAL RESOURCES ROCK SPRINGS UPLIFT
PROJECT NUMBER
9420-01091
INVESTIGATORS
H. W. ROEHLER
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046,
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY CO
ABSTRACT

THE AREAL GEOLOGY WILL BE MAPPED AND THE LOCATION OF COAL AND OTHER MINERAL DEPOSITS WILL BE DETERMINED BY FIELD INVESTIGATIONS IN THE CAMEL ROCK AND POINT OF ROCKS SE QUADRANGLES IN THE ROCK SPRINGS UPLIFT AREA IN SOUTHWEST WYOMING. STRATIGRAPHIC, STRUCTURAL, MINERALOGIC, PALEONTOLOGIC, ENVIRONMENTAL, GEOCHEMICAL, AND ECONOMIC STUDIES WILL ALSO BE UNDERTAKEN IN THE QUADRANGLE AREAS.

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00000807
PROJECT TITLE
GEOLOGY AND COAL RESOURCES OF THE ROCK SPRINGS UPLIFT, WYOMING
PROJECT NUMBER
9C78-74
INVESTIGATORS
P. J. LAPOINT
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
LOCATION
WY
ABSTRACT

PRIOR TO THE EVALUATION AND CALCULATIONS OF COAL RESOURCES IN THE SUPERIOR 15' QUADRANGLE (IN THE ROCK SPRINGS UPLIFT), THE DATA BASE WILL BE EXPANDED BY A. GEOLOGIC MAPPING, B. MEASUREMENT AND CORRELATION OF COAL BEDS AND COAL ZONES, AND C. INTERPRETATION OF DRILLERS' AND ELECTRIC LOGS. FROM THIS, MINERAL OCCURRENCE MAPS WILL BE CONSTRUCTED AND RESOURCE DEVELOPMENT MAPS DERIVED.

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00000808
PROJECT TITLE
GEOLOGY AND ENERGY RESOURCES OF THE HANNA AND CARBON BASINS, WYOMING
PROJECT NUMBER
9C74-74
INVESTIGATORS
L. F. BLANCHARD / PHIL EAGER
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BOX 25046,

DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY
ABSTRACT

A PRELIMINARY COAL DEVELOPMENT POTENTIAL MAP COVERING THE ENTIRE BASIN AT A SCALE OF 1:62500, USING COAL RESOURCE DATA FROM U.S.G.S. BULL. 804, IS BEING COMPLETED. TWO COAL RESOURCE MAPS (SEMINOE DAM SE AND PATS BOTTOM QUADRANGLES) WILL BE PUBLISHED IN OPEN FILE FORM THIS SPRING. THE DATA WAS COLLECTED DURING THE LAST TWO FIELD SEASONS. THIS COMING FIELD SEASON THE DATA FOR ONE OR MORE COAL RESOURCE MAPS (CARBON AND POSSIBLY HALFWAY HILL QUADRANGLES) WILL BE COLLECTED. UP TO THIRTEEN 500' HOLES WILL BE DRILLED NEAR THE WESTERN MARGIN OF THE BASIN. IN ADDITION, STRATIGRAPHIC WORK ON THE FERRIS AND HANNA FORMATIONS WILL BE CLOSER TO OMPLETION WITH ADDITIONAL STATIGRAPHIC SECTION MEASUREMENTS AND FOSSIL COLLECTIONS.

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00000809
PROJECT TITLE
HOLMES RANCH QUADRANGLE
PROJECT NUMBER
9C56-75
INVESTIGATORS
N.E. MICHLICH / J. WARING
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / P.O. BOX 2373/
CASPER, WY 82602
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
MT
ABSTRACT

EVALUATE COAL DEPOSITS, ESTABLISH OR REVISE KNOWN COAL LEASING AREAS, AND ACQUIRE COAL RESOURCE DATA NEEDED FOR COAL RESOURCE OCCURRENCE MAPS AND COAL RESOURCE DEVELOPMENT POTENTIAL; PROVIDE COAL RESOURCE DATA TO ESTABLISH MINIMUM ACCEPTABLE BONUS BIDS, CALCULATE ADVANCE ROYALITES, AND OUTLINE PROSPECTIVE LEASE BLOCKS AND LOGICAL MINING UNITS; PROVIDE GEOLOGIC DATA FOR PROBABLE SITE SPECIFIC ENVIRONMENTAL ANALYSIS OR IMPACT STATEMENTS; TO ACCUMULATE DATA CONCERNING COAL DEPOSITS TO SUPPORT BLM'S COAL LEASING PROGRAM AND TO PROVIDE BASIC DATA FOR IDENTIFICATION AND UPDATING OF LEASABLE MINERAL RESOURCE POTENTIAL OF FEDERAL LANDS FOR RETENTION - DISPOSAL AND MULTIPLE USE CLASSIFICATION (1:250,000 LEASABLE MINERAL AND WATERPOWER CLASSIFICATION MAPS).

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00000810
PROJECT TITLE
GEOLOGY AND ENERGY RESOURCES OF THE KEMMERER COAL AREA, WYOMING
PROJECT NUMBER
9C73-74
INVESTIGATORS
M. L. SCHROEDER
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BOX 25046
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY
ABSTRACT

CONTINUE GEOLOGIC MAPPING, MEASURE COAL SECTIONS, AND CALCULATE COAL RESOURCES FOR AREAS MAPPED.

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00000811
PROJECT TITLE
TECKLA QUADRANGLE, WYOMING - PINEY CANYON SW, TECKLA SW, PINEY CANYON SW
PROJECT NUMBER
9C64-76
INVESTIGATORS
J. GOOLSBY
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BOX 2373 /
CASPER, WY 82602
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY
ABSTRACT

QUADRANGLE MAPPING, STRIP MAPPING, DRILLING, AND POSSIBLY GEOPHYSICAL INVESTIGATIONS WILL BE CARRIED OUT IN ORDER TO EVALUATE COAL DEPOSITS, ESTABLISH OR

REVISE KCLA'S AND ACQUIRE COAL RESOURCE DATA NEEDED FOR COAL RESOURCE OCCURRENCE MAPS AND COAL RESOURCE DEVELOPMENT POTENTIAL MAPS; PROVIDE RESOURCE DATA TO ESTABLISH MINIMUM ACCEPTABLE BONUS BIDS; CALCULATE ADVANCE ROYALTIES AND OUTLINE PROSPECTIVE LEASE BLOCKS AND LOGICAL MINING UNITS, GEOLOGIC DATA CONCERNING COAL DEPOSITS TO SUPPORT BLM'S COAL LEASING STATEMENTS; PROVIDE GEOLOGIC DATA FOR PROBABLE SITE SPECIFIC ENVIRONMENTAL ANALYSIS OR INPUT UNITS AND TO PROVIDE BASIC DATA FOR IDENTIFICATION AND UPDATING OF LEASABLE MINERAL RESOURCE POTENTIAL OF FED. LANDS FOR RETENTION DISPOSAL AND MULTIPLE USE CLASSIFICATION (1:250,000 LEASABLE MINERAL AND WATERPOWER CLASSIFICATION MAPS).

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00000812

PROJECT TITLE

EVALUATION OF LIGNITE RESOURCES, WEST-CENTRAL NORTH DAKOTA

PROJECT NUMBER

9C51-75

INVESTIGATORS

E. A. REHBEIN

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BILLINGS, MT 59101

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

ND

ABSTRACT

EVALUATION OF THE NEAR-SURFACE COAL DEPOSITS OF THE DUNN CENTER, BEULAH-ZAP, DICKINSON, UNDERWOOD, AND CENTER-STANTON AREAS WILL CONTINUE. FROM THE AREA EXAMINED LAST SUMMER, FIELD MAPPING WILL BE EXTENDED NORTHWEST ALONG THE LITTLE MISSOURI BREAKS IN DUNN AND MCKENZIE COUNTIES. NEAR-SURFACE EVALUATIONS WILL BE COMPLEMENTED BY COMPILATION AND EVALUATION OF DEEP COAL BED RESOURCES.

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00000813

PROJECT TITLE

COAL RESOURCES OF THE WESTERN SW QUADRANGLE, WYOMING

PROJECT NUMBER

9C49-73

INVESTIGATORS

R. W. JONES

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BOX 2373 / CASPER, WY 82602

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

WY

ABSTRACT

COMPLETION OF MAPPING PROJECT FOR EVALUATION OF COAL DEPOSITS, REVISING KNOWN COAL LEASING AREAS, AND ACQUISITION OF COAL RESOURCE DATA.

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00000814

PROJECT TITLE

PINEY CANYON NW, RENO RESERVOIR, LITTLE THUNDER RESERVOIR, TURNERCREST NE - OPEN A RANCH

PROJECT NUMBER

9C60-75A

INVESTIGATORS

G. C. MARTIN

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BOX 2373 / CASPER, WY 82602

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

WY

ABSTRACT

EVALUATE COAL DEPOSITS, ESTABLISH OR REVISE KNOWN COAL LEASING AREAS, AND ACQUIRE COAL RESOURCE DATA NEEDED FOR COAL RESOURCE OCCURRENCE MAPS AND COAL RESOURCE DEVELOPMENT POTENTIAL MAPS.

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00000815

PROJECT TITLE

ORGANIC GEOCHEMISTRY OF COAL

PROJECT NUMBER

9420-01525

INVESTIGATORS

I. A. BREGER

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

12201 SUNRISE VALLEY DR. / HERNDON, VA 22092
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
FL IL ND MT
ABSTRACT

DETAILED STUDY OF CORES OF PEAT FROM THE EVERGLADES WILL BE CONTINUED TO EVALUATE DIAGENETIC CHANGES IN THE ORGANIC DEBRIS. EFFORTS WILL ALSO BE MADE TO FOLLOW THE ORIGIN AND CHARACTER OF ORGANICALLY BOUND SULFUR AND NITROGEN. INVESTIGATIONS OF THE CHEMICAL STRUCTURE HYDROGEN, OR OTHER GASES WITH THE COAL AT ROOM OR NEAR-ROOM TEMPERATURE. STUDY OF THE MECHANISMS AND KINETICS OF OXIDATION OF LIGNITE, SUBITUMINOUS AND BITUMINOUS COALS WILL BE COMPLETED. PETROGRAPHIC STUDY OF COALS, USING THE OPTICAL MICROSCOPE, SCANNING ELECTRON MICROSCOPE, AND PROBE, TOGETHER WITH X-RAY FLUORESCENCE, WILL BE EXPANDED TO EXAMINE THE INTERRELATIONSHIPS OF VARIOUS MINERALS AND ELEMENTS WITH THE MACERALS.

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00000816
PROJECT TITLE
COAL RESOURCES OF PEARL SCHOOL QUADRANGLE AND ADJOINING AREAS, BIG HORN COUNTY, MONTANA
PROJECT NUMBER
9C46-71
INVESTIGATORS
G. L. GALYARDT
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
MT
ABSTRACT

OBJECTIVE: TO SUBMIT THE COMPILED MAP AND ASSOCIATED COAL SECTIONS FOR TECHNICAL REVIEW. FOR OPEN-FILE.

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00000817
PROJECT TITLE
EVALUATION OF LIGNITE RESERVES, GIRARD FIELD, MONTANA
PROJECT NUMBER
9C55-75
INVESTIGATORS
M. A. SOULE
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
BILLINGS, MT 59101
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
MT
ABSTRACT

QUADRANGLE MAPPING WILL CONTINUE IN RICHLAND COUNTY, MONTANA. OVER 1500 M. OF DRILL HOLES ARE PLANNED TO PROVIDE ADDITIONAL DATA ON SUB-SURFACE OCCURRENCES OF THE LIGNITE BEDS. SEVERAL KNOWN COAL LEASING AREAS WITHIN THE GIRARD COAL FIELD ARE BEING COMPILED FROM DATA CURRENTLY AVAILABLE. THESE AREAS WILL BE EXTENDED TO FORM ONE LARGE KCLA, THE GIRARD KCLA, AS THE MAPPING AND DRILLING PROGRAMS CONTINUE.

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00000818
PROJECT TITLE
EVALUATION OF LIGNITE RESOURCES, SIDNEY COAL FIELD, MONTANA
PROJECT NUMBER
9C83-75
INVESTIGATORS
M. J. CARNEVALE
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BILLINGS, MT 59101
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
MT ND
ABSTRACT

OBJECTIVES OF THE FIELD MAPPING PROJECT INCLUDE COMPLETION OF THE SIDNEY NE QUADRANGLE, MONTANA-NORTH DAKOTA AND POSSIBLE COMPLETION OF THE PICHE QUADRANGLE, MONTANA. SCALE 1:24,000. OBJECTIVES FOR OVERALL COAL EVALUATION IN THE SIDNEY KCLA INCLUDE 10,000 FEET OF PROPOSED DRILL HOLE. FROM THIS DATA, THE APPRORRIATE MAPS WILL BE DRAWN.

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00000819
PROJECT TITLE
EVALUATION OF LIGNITE RESOURCES, WILLISTON AREA, NORTH DAKOTA

PROJECT NUMBER

9C54-75

INVESTIGATORS

J. M. SPENCER

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. / BILLINGS, MT 59101

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

ND

ABSTRACT

THE WILLISTON KNOWN COAL LEASING AREA WILL BE COMPLETED, COVERING THE GREATER PART OF SOUTHEASTERN WILLIAMS COUNTY. THE 1:24,000 QUADRANGLES CHARLSON AND CHARLSON SW WILL SUPPORTED BY 3,500 FEET OF DRILLING.

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00000820

PROJECT TITLE

MCCONE COUNTY, MONTANA LIGNITE RESOURCE EVALUATION

PROJECT NUMBER

9C53-75

INVESTIGATORS

J. TAYLOR

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. BILLINGS, MT 59101

PRIMARY SPONSOR

U. S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

MT

ABSTRACT

EVALUATE COAL DEPOSITS, ESTABLISH OR REVISE KNOWN COAL LEASING AREAS, AND ACQUIRE COAL RESOURCES DATA NEEDED FOR COAL RESOURCE OCCURRENCE MAPS AND COAL RESOURCE DEVELOPMENT POTENTIAL MAPS; PROVIDE COAL RESOURCE DATA TO ESTABLISH MINIMUM ACCEPTABLE BONUS BIDS, CALCULATE ADVANCE ROYALTIES, AND OUTLINE PROSPECTIVE LEASE BLOCKS AND LOGICAL MINING UNITS; PROVIDE GEOLOGIC DATA FOR PROBABLE SITE SPECIFIC ENVIRONMENTAL ANALYSIS OR IMPACT STATEMENTS; TO ACCUMULATE DATA CONCERNING COAL DEPOSITS TO SUPPORT BLM'S COAL LEASING PROGRAM AND TO PROVIDE BASIC DATA FOR IDENTIFICATION AND UPDATING OF LEASABLE MINERAL USE CLASSIFICATION (1:250,000 LEASABLE MINERAL AND WATERPOWER CLASSIFICATION MAPS).

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00000821

PROJECT TITLE

EVALUATION OF LIGNITE RESOURCES, ADAMS, BOWMAN, AND SLOPE CO., NORTH DAKOTA

PROJECT NUMBER

9C52-75

INVESTIGATORS

R. C. LEWIS

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV. BILLINGS, MT 59101

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

ND

ABSTRACT

GASCOYNE 2, NW, WILL BE SUBMITTED FOR REVIEW. GASCOYNE 2, SW, AND MEDORA 3, SE, WILL BE COMPLETED. EVALUATION OF THE COAL RESOURCES WITHIN THESE AND OTHER QUADS IN SLOPE, BOWMAN, AND ADAMS COUNTIES WILL BE COMPLETED.

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00000822

PROJECT TITLE

ENERGY LANDS PROGRAM - ENGINEERING GEOLOGIC STUDIES, POWDER RIVER BASIN

PROJECT NUMBER

9550-01631

INVESTIGATORS

F. W. OSTERWALD

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, ENGINEERING GEOLOGY BR.

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

WY MT

ABSTRACT

CONTINUE INVESTIGATION OF LANDSLIDES AND ASSOCIATED SLOPE STABILITY PROCESSES. CONTINUE STUDY OF SURFACE SUBSIDENCE OVER ABANDONED UNDERGROUND COAL MINES AND IN AREAS OF BURNING COAL BEDS. STUDY STABILITY OF CUT SLOPES IN STRIP MINES. CONTINUE ENGINEERING

GEOLOGIC MAPPING AT SHERIDAN, WYOMING, AND REGIONAL ENGINEERING GEOLOGIC MAPPING OF THE NORTHWESTERN PART OF THE POWDER RIVER BASIN. SEISMIC MONITORING OF STRIP MINES AND PROPOSED MINE SITES. ENGINEERING GEOPHYSICAL INVESTIGATIONS IN SUPPORT OF GEOLOGIC MAPPING AND ASSOCIATED GEOTECHNICAL STUDIES. GEOTECHNICAL ANALYSES OF DRILL CORES FROM SELECTED SITES.

*****

00000823

PROJECT TITLE

COAL PETROLOGY STUDY

INVESTIGATORS

DR. MICHAEL WOODS

RESEARCH INSTITUTION

MONTANA DEPT. OF STATE LANDS / HELENA, MT 59601

COORDINATOR

MONTANA BUREAU OF MINES & GEOLOGY

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

PRIMARY FUNDING AMOUNT

1977 - 5,000

TIME FRAME

FEB. 1977 TO CONTINUING

LOCATION

MT - CENTRAL AND EASTERN AREAS

ABSTRACT

CONSIDERABLE VARIATION IN INORGANIC CONTENT MAY BE EXPECTED WITHIN A SINGLE COAL BASIN CORRELATING WITH LATERAL POSITION AND MACERAL CONTENT. SUCH VARIATIONS WOULD CORRESPOND NOT ONLY WITH TOTAL ASH, BUT ALSO WITH TRACE ELEMENTS SUCH AS F, B, MM, BA AND SR, ALL OF WHICH OCCUR IN VERY HIGH LOCAL CONCENTRATIONS WITH NORTHERN POWDER RIVER BASIN COALS AND WHICH ARE OF POSSIBLE ENVIRONMENTAL SIGNIFICANCE.

ONE PURPOSE OF THE STUDY IS TO EXAMINE, BY PETROGRAPHIC MICROSCOPE, A THOROUGH SAMPLING OF COALS FROM CENTRAL AND EASTERN MONTANA IN AN EFFORT TO ESTABLISH A RAPID MEANS OF EVALUATING LARGE COAL MEASURES FOR ASH AND TRACE ELEMENT CONTENTS. THIS WILL INVOLVE SOME ELECTRON MICROPROBE WORK.

A SECOND GOAL IS TO OBTAIN REFLECTANCE MEASUREMENTS IN THE VENTRINITE MACERALS WITHIN THE COAL. SUCH REFLECTANCE SHOULD CORRELATE WITH BTU CONTENT, AND IS A POSSIBLE MEANS OF RAPIDLY EVALUATING THE ECONOMIC POTENTIAL OF COAL MEASURES. (MEAC)

STUDY AFFILIATION

THIS PROJECT IS CLOSELY RELATED TO 'CHARACTERIZATION OF COAL FOR OPEN-CYCLE MHD POWER GENERATION SYSTEM - TASK A,' MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST., SERIAL NUMBER 00000488, ERIS QUARTERLY REPORT, VOL. 1, NO. 3, MAY 1976.

*****

00000824

PROJECT TITLE

COAL RESOURCES OF NEBRASKA

INVESTIGATORS

RAYMOND R. BURCHETT

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.

TIME FRAME

JULY 1975 TO JULY 1977

LOCATION

NE

ABSTRACT

REVIEW OF RESOURCE POTENTIAL, GEOLOGIC OCCURRENCE AND HISTORY OF EXPLOITATION.

1.9 OTHER
*****

00000825

PROJECT TITLE
ACQUIRING TEST AREA IMAGERY
PROJECT NUMBER
003.2-76
INVESTIGATORS
DENNY PARKER (WELUT)
RESEARCH INSTITUTION
HARP, LTD. / DENVER, CO
PRIMARY SPONSOR
U.S. FISH & WILDLIFE SERV., WELUT / DENNY PARKER /
RM. 206, FED. BLDG. / FT. COLLINS, CO. 80522
PRIMARY FUNDING AMOUNT
9,600
TIME FRAME
JUNE 30, 1976 TO AUG. 30, 1977
LOCATION
ND WY CO MT - POWDER RIVER BASIN
ABSTRACT
THIS PROJECT IS DESIGNED TO ACQUIRE 1:24,000 - 1:31,680 COLOR INFRARED IMAGERY AT A SELECTED SCALE FOR THE REGIONAL ENVIRONMENTAL TEST AREAS BY DUPLICATING THE EXISTING BEST ONE-TIME COPY TEST AREA IMAGERY CURRENTLY LOCATED AT VARIOUS OTHER AGENCY OFFICES, OBTAIN NEW AERIAL PHOTOGRAPHY WHERE COVERAGE FOR EACH TEST AREA DOES NOT EXIST, AND PURCHASE DIGITAL MAGNETIC TAPES OF SPECIFIED LANDSAT IMAGERY FOR EACH TEST AREA. THE ACQUISITION OF IMAGERY WILL BE A JOINT EFFORT AMONG THE FWS AND BLM, AND WILL BE COORDINATED BY REGION 6, OBS PERSONNEL. IMAGERY HAS BEEN ACQUIRED FOR ALL TEST AREAS EXCEPT NORTH DAKOTA, WHICH WILL BE FLOWN LATER THIS YEAR.

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00000826

PROJECT TITLE

GAS PIPELINE STUDIES - EIS

INVESTIGATORS

O. J. FERRIANS

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, BR. OF ALASKAN GEOLOGY /
345 MIDDLEFIELD RD / MENLO PARK, CA 94025

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

YUKON AND NORTHWEST TERRITORIES, ALBERTA, BRITISH COLUMBIA, AND SASKATCHEWAN IN CANADA; AND ALASKA, IDAHO, OREGON, CALIFORNIA, NEVADA, WASHINGTON, MONTANA, NORTH DAKOTA, SOUTH DAKOTA, MINNESOTA, IOWA, WISCONSIN, ILLINOIS, INDIANA, OHIO, AND PENNSYLVANIA.

ABSTRACT

THE PRIMARY OBJECTIVE OF THIS PROJECT IS THE PREPARATION OF A MAJOR PART OF THE CONSOLIDATED ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE PROPOSED SYSTEMS FOR TRANSPORTING ALASKAN NATURAL GAS FROM PRUDHOE BAY TO MARKET IN THE CONTERMINOUS UNITED STATES. THE PROPOSED PRIME ROUTE AND ALTERNATIVE ROUTES ARE BEING ASSESSED. FOR THE CANADIAN PARTS OF THE ROUTES, ALL SECTIONS OF THE EIS ARE BEING PREPARED. FOR THE ALASKAN PARTS, SECTIONS DESCRIBING THE EXISTING ENVIRONMENT AND EVALUATING THE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION IN REGARD TO GEOLOGY, HYDROLOGY, PERMAFROST, SEISMICITY, AND ACTIVE FAULTS ARE BEING PREPARED.

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00000827

PROJECT TITLE

PROJECTING NATURAL GAS PRICES IN WESTERN MONTANA

INVESTIGATORS

DR. RICHARD L. STROUP

RESEARCH INSTITUTION

MONTANA STATE UNIV., DEPT. OF AG. ECONOMICS & ECONOMICS
BOZEMAN, MT 59715

COORDINATOR

MONTANA ENERGY ADVISORY COUNCIL

PRIMARY SPONSOR

MONTANA DEPT. OF ADMINISTRATION

SECONDARY SPONSOR(S)

MONTANA OFFICE OF BUDGET & PROGRAM PLANNING

PRIMARY FUNDING AMOUNT

2,590

TIME FRAME

NOV. 1976 TO JAN. 1977

LOCATION

MT - WESTERN PART

ABSTRACT

THE PRIMARY OBJECTIVE OF THIS PROJECT WAS TO PROJECT PRICES FOR NATURAL GAS IN THE STATE OF MONTANA. A COMBINATION OF TRADITIONAL ECONOMETRIC ANALYSES AND CONSULTATION WITH KNOWLEDGEABLE REPRESENTATIVES OF GOVERNMENT AND PRIVATE INDUSTRY WERE USED TO DEVELOP 'BEST ESTIMATES' FOR PRICES FOR 1980, 1985, AND 1990. THE RESULTS OF THIS PROJECT ARE INTENDED AS AN AID TO DECISION-MAKING IN THE OFFICE OF THE STATE ARCHITECT. (MEAC)

REPORTS AND PUBLICATIONS

RICHARD STROUP. PROJECTING NATURAL GAS PRICES IN WESTERN MONTANA. JANUARY 1977.

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00000828

PROJECT TITLE

ANNUAL OIL RESERVE ESTIMATE FOR THE STATE OF MONTANA

INVESTIGATORS

JUDSON D. SWEET

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION, OIL & GAS CONS. / 15 POLY DR. / BILLINGS, MT 59101

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
OIL & GAS CONS. BD.

PRIMARY FUNDING AMOUNT

2,500 ANNUALLY

TIME FRAME

1955 TO CONTINUING

ABSTRACT

ANNUAL RESERVES ESTIMATES OF OIL FOR THE STATE OF MONTANA SINCE 1955 ARE MADE BY THE STATE PETROLEUM ENGINEER AT THE DIRECTION OF THE OIL AND GAS CONSERVATION BOARD. FOR THE MOST PART THESE RESERVES ARE BASED ON DECLINE CURVES USING THE CONSTANT PERCENTAGE DECLINE METHOD.
IN NEW FIELDS, VOLUMETRIC METHODS ARE USED AND DETERMINE RESERVE ESTIMATES.
THE RESERVE ESTIMATE IS INITIATED EACH YEAR WHEN FINAL PRODUCTION FIGURES FOR THE PRIOR YEAR BECOME AVAILABLE, USUALLY AROUND THE MIDDLE OF FEBRUARY. WORK ON THE RESERVE ESTIMATES IS SANDWICHED BETWEEN OTHER ROUTINE DUTIES OF THE PETROLEUM ENGINEER AS TIME PERMITS. (MEAC)

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00000829
PROJECT TITLE
BASIN ANALYSIS OF WILLISTON BASIN CARBONATES
INVESTIGATORS
DR. LEE C. GERHARD
RESEARCH INSTITUTION
NORTH DAKOTA GEOLOGICAL SURVEY / UNIVERSITY STATION /
GRAND FORKS, ND 58202
PRIMARY SPONSOR
NORTH DAKOTA GEOLOGICAL SURVEY
TIME FRAME
SEPT. 1975 TO CONTINUING
LOCATION
ND
ABSTRACT
OBJECTIVE: DETERMINE DEPOSITIONAL ENVIRONMENTS, DIAGENETIC PARAGENESIS AND PETROLIFEROUS LOCALIZATIONS FOR A SERIES OF CARBONATE ROCK UNITS.
METHODOLOGY: STANDARD CORE, LOGA, SAMPLE AND OUTCROP TECHNIQUES FOR CARBONATE STUDIES.
GEOGRAPHIC AREA: GENERAL APPLICATIONS PLUS SPECIFIC OIL AND GAS APPLICATIONS

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00000830
PROJECT TITLE
GEOCHEMISTRY OF OIL SHALE REGION
INVESTIGATORS
W. E. DEAN
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046,
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
UT CO WY
ABSTRACT
THE MAIN OBJECTIVE OF THE OILSHALE PROJECT IS TO ESTABLISH THE EXTENT AND MAGNITUDE OF REGIONAL VARIATIONS OF GEOCHEMICAL COMPONENTS, ESPECIALLY TRACE AND MINOR ELEMENTS, IN ROCKS, SEDIMENTS, SOILS, PLANTS, AND WATERS WITHIN THE OIL SHALE AREAS OF COLORADO, UTAH, AND WYOMING. THIS INVESTIGATION WILL PROVIDE NATURAL BASELINES AGAINST WHICH GEOCHEMICAL EFFECTS OF OIL SHALE PRODUCTION, PROCESSING, AND LAND RECOVERY CAN BE MEASURED. THE MOST IMPORTANT ASPECT OF THESE NATURAL LEVELS IS WHETHER OR NOT THEY EXHIBIT REGIONAL CHANGES OR TRENDS. IN OTHER WORDS, WILL DIFFERENT BASELINES AND METER STICKS BE REQUIRED IN DIFFERENT AREAS? INITIAL WORK WILL INCLUDE COMPILATION OF EXISTING CHEMICAL ANALYSES AND A LIMITED AMOUNT OF FIELD SAMPLING.

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00000831
PROJECT TITLE
GEOLOGY OF ORGANIC SHALES
PROJECT NUMBER
9410-01766
INVESTIGATORS
W. W. MALLORY
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
LOCATION
ALL CONTERMINOUS WEST OF MISSISSIPPI RIVER
ABSTRACT
CURRENT WORK ON COLORADO AND NEW MEXICO SHOULD BE COMPLETED AND PUBLISHED WITHOUT DELAY AS AN OIL AND GAS CHART. EFFORTS SIMILAR TO THE APPROACH USED IN THE COLORADO-NEW MEXICO REGION WILL BE ADAPTED TO THE UTAH-WYOMING-MONTANA REGION.

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00000832
PROJECT TITLE
GEOCHEMISTRY AND PETROLEUM SOURCES ROCK STUDY OF CARBONATES
INVESTIGATORS
J. G. PALACAS
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
LOCATION
FL MT TX
ABSTRACT
THE MAJOR OBJECTIVES ARE TO DETERMINE THE GEOCHEMICAL AND GEOLOGIC FACTORS RESPONSIBLE FOR THE PRESERVATION, GENERATION, EXPULSION, MIGRATION AND ACCUMULATION OF PETROLEUM IN CARBONATE ROCKS. SOME OF THE FACTORS WHICH WILL BE EXAMINED ARE TYPE OF ROCK, NATURE OF ORIGINAL ORGANIC MATERIAL, CHARACTER AND AMOUNT OF

KEROGEN AND HYDROCARBONS, DEGREE OF THERMAL MATURATION, AND DEVELOPMENT OF POROSITY.
INITIAL STUDIES WILL BE FOCUSED ON CARBONATE SEQUENCES IN THE FOLLOWING AREAS: 1. SOUTH FLORIDA BASIN, FLORIDA - MESOZOIC ROCKS WITH EMPHASIS ON THE LOWER CRETACEOUS. 2. WESTERN WILLISTON BASIN, MONTANA - PREDOMINANTLY LOWER AND MIDDLE PALEOZOIC ROCKS. 3. PERMIAN BASIN, WEST TEXAS - PERMIA ROCKS.

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00000833
PROJECT TITLE
BEDROCK GEOLOGY AND THICKNESS OF OVERLYING QUATERNARY DEPOSITS (CENTRAL NEBRASKA BASIN)
INVESTIGATORS
G. E. PRICHARD
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, BR. OF CENTRAL ENVIRON. GEOLOGY /
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
NE
ABSTRACT

GEOLOGIC MAPPING OF THE MCCOOK, NEBRASKA, 2-DEGREE QUADRANGLE WILL BE PRINCIPALLY IN THE EASTERN ONE-HALF DURING FY 1976. THE SURFICIAL GEOLOGY WILL BE COMPILED ON A TOPOGRAPHIC BASE AT A SCALE OF 1:250,000. ADDITIONAL DATA FROM THE FILES OF THE NEBRASKA GEOLOGICAL SURVEY AND THE CURRENT TEST WELL DRILLING PROGRAM WILL BE USED TO DETERMINE THE DEPTH AND THE IDENTITY OF BEDROCK IN THE QUADRANGLE. OIL, GAS, LIMESTONE, AND CLAY FROM PALEOZOIC AND MESOZOIC ROCKS, IN ADDITION TO SAND AND GRAVEL FROM CENOZOIC DEPOSITS, ARE SIGNIFICANT COMMODITIES. VOLCANIC ASH DEPOSITS ARE FOUND AT SEVERAL PLACES IN THE AREA. THE COMPLETED MAP OF THE QUADRANGLE WILL BE PREPARED FOR PUBLICATION BY THE U.S. GEOLOGICAL SURVEY IN THE MISCELLANEOUS GEOLOGICAL INVESTIGATIONS MAP SERIES.

00000834
PROJECT TITLE
WASHAKIE WILDERNESS AND NORTH AND SOUTH ABSAROKA CONTIGUOUS AREAS, WYOMING
PROJECT NUMBER
9370-01580
INVESTIGATORS
J. C. ANTWEILER
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
BOX 25046, DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
WY
ABSTRACT

SEVERAL INTRUSIVE CENTERS IN THE WASHAKIE WILDERNESS WILL BE MAPPED AND STUDIED IN DETAIL TO DETERMINE THEIR MINERAL POTENTIAL. THE KIRWIN DISTRICT, WHICH BORDERS THE AREA, IS NOW KNOWN TO CONTAIN SUFFICIENT TOPPER TO BE COMMERCIALLY IMPORTANT. THREE OTHER INTRUSIVE CENTERS HAVE BEEN STAKED BY MINING COMPANIES. ALL THESE AREAS WITH KNOWN MINERALIZATION WILL BE STUDIED TO DETERMINE GEOLOGICAL AND GEOCHEMICAL CRITERIA BY WHICH THEY CAN BE RECOGNIZED AND EVALUATED. SUCH CRITERIA SHOULD BE USEFUL IN SEARCHING FOR EVIDENCE OF ORE DEPOSITS IN OTHER PARTS OF THE ABSAROKA MOUNTAINS. A BOUGUER GRAVITY SURVEY WILL BE MADE TO DETERMINE THE POSSIBILITY OF STRUCTURES IN THE SEDIMENTARY ROCKS COVERED BY THE THICK PILE OF VOLCANIC ROCKS THAT COULD BE FAVORABLE FOR THE ACCUMULATION OF OIL AND GAS.

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00000835
PROJECT TITLE
APPLICATION OF ERTS AND SKYLAB-EREP DATA TO PETROLEUM EXPLORATION
PROJECT NUMBER
RTOP 177-53-41-02
INVESTIGATORS
N. M. SHORT / M. PODWYSOCKI / H. TIEDEMANN / H. BLODGET
RESEARCH INSTITUTION
U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN., GODDARD SPACE CTR.
GREENBELT, MD 20771
PRIMARY SPONSOR
U.S. NATIONAL OCEANIC & ATMOSPHERIC ADMIN., GODDARD SPACE CTR.

PRIMARY FUNDING AMOUNT
   1975 - 90,000
LOCATION
   ND WY TX
ABSTRACT

AN ERTS-1 (NASA-FUNDED) INVESTIGATION BY THE EASON OIL CO. OF OKLAHOMA CITY HAS DEMONSTRATED A STRONG RELATIONSHIP BETWEEN OIL-TRAP STRUCTURES AND LINEAMENTS REVEALED BY ERTS AND HAS IDENTIFIED HITHERTO UNKNOWN SURFACE ANOMALIES THAT SHOW A BETTER THAN 80 PERCENT CORRELATION WITH PRODUCING FIELDS. SOME PATTERNS RELATE TO GEOCHEMICAL ANOMALIES OF SEVERAL KINDS CAUSED BY INTERACTIONS BETWEEN ESCAPING HYDROCARBONS AND ROCK, SOIL, OR VEGETATION AT THE SURFACE. THE NASA RESEARCH IS DESIGNED FIRST TO VERIFY, CLARIFY, AND EXTEND THE RESULTS TO SEVERAL OTHER PETROLEUM-PRODUCING AREAS OF THE UNITED STATES TO DEMONSTRATE THAT ORBITAL REMOTE SENSING HAS THE BROAD OR GENERAL CAPABILITY OF PICKING OUT SURFACE MANIFESTATIONS OF OIL AND GAS IN A VARIETY OF GEOLOGIC TERRAINS AND CONDITIONS. BASINS INCLUDED IN THE RESEARCH ARE 1. ANADARKO (BEING RE-STUDIED BY SPECIAL TECHNIQUES INVOLVING COMPUTER GRAPHICS AND OTHER DATA EXTRACTION AND ENHANCEMENT SYSTEMS); 2. WILLISTON BASIN, NORTH DAKOTA; 3. WIND RIVER AND GREEN RIVER BASINS, WYOMING, AND 4. WEST TEXAS. THE STEPS BEING FOLLOWED IN CONDUCTING THE RESEARCH ARE 1. ANALYSIS OF ERTS AND EREP DATA BY CONVENTIONAL PHOTOGEOLOGIC METHODS; 2. INTENSIVE STUDY OF RECOGNIZED SURFACE ANOMALIES BY COMPUTER ENHANCEMENTS, FIELD WORK, ETC.; 3. COORDINATION OF ERTS RESULTS WITH SUPPORTING AIRCRAFT FLIGHTS; 4. INTERPRETATION OF RESULTS BY COMPARISON WITH RELEVANT SURFACE AND SUBSURFACE DATA; AND 5. OVERALL SYNTHESIS OF STUDY RESULTS TO DEFINE A WORKING MODEL FOR USE OF SATELLITE REMOTE SENSING DATA IN PETROLEUM EXPLORATION.

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00000836
PROJECT TITLE
   MINERAL RESOURCES OF THE CHOTEAU 2 DEGREE QUADRANGLE, MONTANA
PROJECT NUMBER
   9350-01690
INVESTIGATORS
   M. R. MUDGE
RESEARCH INSTITUTION
   U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046,
   DENVER FEDERAL CENTER / DENVER CO 80225
PRIMARY SPONSOR
   U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
LOCATION
   MT
ABSTRACT

PLANS FOR THIS YEAR INCLUDE COMPLETION OF GEOLOGIC STUDIES IN THE SOUTHEASTERN PART OF THE CHOTEAU 2 DEGREE QUADRANGLE FOR THE PURPOSE OF EVALUATING THE LARGE AEROMAGNETIC ANOMALY IN THE AREA. CONCURRENT WITH THESE STUDIES WILL BE GRAVITY, GROUND MAGNETIC GEOCHEMICAL, AND ISOTOPE INVESTIGATIONS; EVALUATION OF THE PALEONTOLOGIC, STRATIGRAPHIC AND OIL SHALE POTENTIAL IN THE TWO TERTIARY BASINS IN AND NEAR THE SOUTHERN PART OF THE QUADRANGLE. PLANS ALSO INCLUDE COMPLETION OF MINERAL RESOURCE INVESTIGATIONS OF THE ADDITIONS TO THE BOB MARSHALL WILDERNESS.

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00000837
PROJECT TITLE
   WESTERN INTERIOR TERTIARY STUDIES
PROJECT NUMBER
   9410-01406
INVESTIGATORS
   T. D. FOUCH
RESEARCH INSTITUTION
   GEOLOGICAL SURVEY, OIL & GAS DIV. / BOX 25046, DENVER
   FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
   U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
   JULY 1975 TO JUNE 1976
LOCATION
   CO UT WY NV OR ID WA MT AZ NM CA
ABSTRACT

THIS PROJECT IS ATTEMPTING TO ESTABLISH A REGIONAL STRATIGRAPHIC FRAMEWORK FOR TERTIARY ROCKS IN THE WESTERN PART OF THE UNITED STATES, AND TO UNDERSTAND THE RELATED HYDROCARBON ACCUMULATIONS. THE PROJECT IS DESIGNED TO IDENTIFY THOSE ELEMENTS OF THE GEOLOGY THAT HAVE RESULTED IN THE GENERATION AND ENTRAPMENT OF OIL AND GAS IN NONMARINE ROCKS AND TO APPLY THE PRINCIPLES TO EVALUATING THE PETROLEUM POTENTIAL OF PRESENTLY NON-PRODUCTIVE 'FRONTIER' UNITS OR AREAS.

UNDER CURRENT INVESTIGATION ARE: 1. THE MOLLUSCAN FAUNA ASSOCIATED WITH ORGANIC-RICH LACUSTRINE ROCKS IN NORTHEAST UTAH AND THEIR IMPLICATIONS FOR DETECTING SIMILAR ROCKS IN THE GREAT BASIN; 2. THE DETAILED FLORA, FAUNA, AND GEOCHEMICAL ANALYSIS OF ATTRITAL COALS. SIMILAR UNITS MAY REPRESENT PETROLEUM SOURCE BEDS IN THE GREAT BASIN AND SNAKE RIVER PLAIN AREAS; 3. DETAILED DESCRIPTION OF THE ROCK TYPES AND THE ASSOCIATED SEDIMENTARY STRUCTURES AND FOSSILS FOR A SEQUENCE WHICH RECORDS THE EVOLUTION FROM A FRESHWATER TO A SALINE LAKE SYSTEM IN CENTRAL NORTHEAST UTAH; AND 4. THE DESCRIPTION, SAMPLING, AND ANALYSIS OF LACUSTRINE UNITS IN EAST-CENTRAL NEVADA TO

PERMIT RECONSTRUCTION OF THE EOCENE LAKE SYSTEMS WHICH MAY CONTAIN SOURCE AND RESERVOIR UNITS FOR OIL AND GAS. THE CURRENT INVESTIGATIONS REPRESENT EITHER CONTINUATIONS OF PAST STUDIES OR ARE BEING INITIATED IN RESPONSE TO PROJECT WORK THAT HAS INDICATED THE INFORMATION IS IMPORTANT TO UNDERSTANDING THE ORIGIN, MIGRATION, AND ACCUMULATION OF PETROLEUM IN THE WESTERN UNITED STATES.

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00000838
PROJECT TITLE
GEOCHEMISTRY OF SEDIMENTARY ORGANIC MATTER
PROJECT NUMBER
9410-01397
INVESTIGATORS
G. E. CLAYPOOL
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / BOX 25046,
DENVER FEDERAL CENTER / DENVER, CO 80225
PRIMARY SPONSOR
U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
CA AK NV MT WY ID UT FL CO OK
ABSTRACT

BASIC AND APPLIED RESEARCH IN PETROLEUM GEOCHEMISTRY. EVALUATION OF EXISTING THEORIES ON PETROLEUM ORIGIN AND CONDUCT OF EXPERIMENTS NECESSARY TO SYNTHESIZE AND DEVELOP A BODY OF KNOWLEDGE ON PETROLEUM ORIGIN AND MIGRATION APPLICABLE TO EXPLORATION AND RESOURCE APPRAISAL; DEVELOPMENT, IMPLEMENTATION AND PUBLICATION OF ANALYTICAL METHODS AND CRITERIA FOR RECOGNIZING, CORRELATING AND APPRAISING SOURCE ROCKS, PETROLEUMS AND NATURAL GASES; GEOCHEMICAL EVALUATION AND MAPPING OF ALL MAJOR SOURCE-ROCK FORMATIONS IN THE U.S., IN COLLABORATION WITH THE ONSHORE BASIN EVALUATION AND OCS PROGRAM GROUPS. DEVELOPED THERMAL ANALYSIS TECHNIQUE FOR SOURCE ROCK EVALUATION. COMPLETED ANALYTICAL WORK ON SEVERAL MAJOR SOURCE ROCK PROJECTS: PHOSPHORIA; PILOT SHALE; CHAINMAN SHALE; BIG SNOWY/HEALTH/TYLER; CALIFORNIA. CONTINENTAL BORDERLAND. CRUDE OIL-SOURCE ROCK STUDY OF DENVER BASIN CRETACEOUS BY CLAYTON AND SWETLAND 90 PERCENT COMPLETE. CONTINUED WORK ON CRUDE OIL-SOURCE ROCK PROJECTS; COOK INLET AND N. SLOPE ALASKA; CONTINUE RESEARCH ON APPLICATIONS OF THERMAL ANALYSIS FOR CHARACTERIZATION OF ORGANIC MATTER IN SEDIMENTS; APPALACHIAN (BLACK) DEVONIAN SHALES.

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00000839
PROJECT TITLE
WATER QUALITY HYDROLOGY AFFECTED BY OIL SHALE DEVELOPMENT
INVESTIGATORS
D. B. MCWHORTER
RESEARCH INSTITUTION
COLORADO STATE UNIV., DEPT. OF AG. ENGINEERING /
FORT COLLINS, CO 80523
PRIMARY SPONSOR
U.S. EPA, OFFICE OF RESEARCH & DEV.
PRIMARY FUNDING AMOUNT
99,350
TIME FRAME
MAY 1975 TO APR. 1976
LOCATION
CO UT WY
ABSTRACT

THE OBJECTIVE OF THE PROJECT IS TO COLLECT AND MAINTAIN ALL PAST, CURRENT AND FUTURE DATA, STUDIES, AND PLANS PERTINENT TO WATER QUALITY HYDROLOGY OF THE OIL SHALE REGIONS IN COLORADO, UTAH, AND WYOMING AS AFFECTED BY OIL SHALE DEVELOPMENT. THESE DATA WILL BE SUMMARIZED AND PARTIALLY ANALYZED AND INTERPRETED FOR USE BY FEDERAL, STATE, AND PRIVATE DECISION-MAKING BODIES. IN ADDITION, A MATHEMATICAL MODEL, CURRENTLY UNDER DEVELOPMENT FOR USE IN COAL STRIP MINE STUDIES, WILL BE MODIFIED AND TESTED FOR USE IN THE PREDICTION OF THE QUANTITY AND QUALITY OF SURFACE AND SUBSURFACE RUNOFF FROM PROCESSED SHALE RESIDUES AND OILSHALE MINE SPOILS.

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00000840
PROJECT TITLE
INTERFACE AND DEPTH INHOMOGENEITY BY INTERNAL REFLECTION ELLIPSOMETRY
INVESTIGATORS
N. M. BASHARA
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER /
LINCOLN, NE 68588
PRIMARY SPONSOR
NATIONAL SCIENCE FOUNDATION
PRIMARY FUNDING AMOUNT
70,000
TIME FRAME
JAN. 1977 TO DEC. 1978
LOCATION
NE

ABSTRACT

APPLICATION OF THE THEORY OF INTERNAL REFLECTION ELLIPSOMETRY APPLIED TO LIQUID-LIQUID INTERFACES FOR TERTIARY OIL RECOVERY. IN NORMAL OIL RECOVERY PRACTICE ONLY ABOUT 30% OF THE OIL IN THE GROUND CAN BE RECOVERED BY METHODS THAT ARE ECONOMICALLY COMPETITIVE. TO RECOVER OIL THAT CANNOT BE PUMPED BY CONVENTIONAL METHODS, VERY LOW SURFACE TENSION SURFACTANTS MUST BE DEVELOPED. THIS, IN TURN, REQUIRES A NEW ORDER OF UNDERSTANDING OF THE LIQUID-LIQUID INTERFACE PARTICULARLY AT THE CRITICAL TEMPERATURE. INTERNAL REFLECTION ELLIPSOMETRY REPRESENTS A NEW APPROACH TO THIS PROBLEM.

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00000841

PROJECT TITLE

SURFACE ELLIPSOMETRY

INVESTIGATORS

N. M. BASHARA

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER / LINCOLN NE 6058

PRIMARY SPONSOR

NATIONAL SCIENCE FOUNDATION

PRIMARY FUNDING AMOUNT

83,000

TIME FRAME

NOV. 1973 TO AUG. 1977

LOCATION

NE

ABSTRACT

THE THEORY OF INTERNAL REFLECTION ELLIPSOMETRY WAS DEVELOPED FOR THE LIQUID-LIQUID INTERFACE TO CHARACTERIZE THE BEHAVIOR OF SURFACTANTS AND CATALYTIC AGENTS. IMPROVED SURFACTANTS ARE NEEDED FOR TERTIARY OIL RECOVERY AND CATALYTIC PROCESSES ARE IMPORTANT IN COAL CONVERSION TO GAS AND OIL.

REPORTS AND PUBLICATIONS

G. T. AYOUB. INTERNAL REFLECTION ELLIPSOMETRY OF LIQUID-LIQUID INTERFACED. PH. D. THESIS. MAY 1975. FOR MORE CITATIONS, SEE 'ENERGY RESEARCH, DEVELOPMENT, TRAINING AND EXTENSION PROJECTS AT THE UNIVERSITY OF NEBRASKA.' FIRST EDITION. DEC. 1976. AVAILABLE FROM NEB. ENERGY R&D CENTER, 181W NEBRASKA HALL, UNIV. OF NEBRASKA, LINCOLN, NE 68588

00000842
PROJECT TITLE
MEASUREMENT OF SOLAR RADIATION IN NEBRASKA
INVESTIGATORS
LUH C. TAO
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, DEPT. OF CHEMICAL ENG.
LINCOLN, NE 68588
PRIMARY SPONSOR
NEBRASKA ENERGY OFFICE
UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER
PRIMARY FUNDING AMOUNT
1,720
TIME FRAME
JULY, 1976 TO JUNE, 1977
LOCATION
NE
ABSTRACT

THIS PROJECT IS TO MEASURE SOLAR ENERGY INPUT BY USING A STAR PYRANOMETER WITH A RECORDER. THE RADIATION LEVELS ARE RECORDED BY A STRIP CHART RECORDER FOR COMPUTATION. DUE TO A DELAY OF PYRANOMETER REPAIR, THE MEASUREMENT PHASE OF THIS PROJECT WAS STARTED IN JULY 1976. RECORDER CHARTS FOR JULY AND AUGUST HAVE BEEN COMPUTED BY INTEGRATION. FUTURE MEASUREMENTS WILL BE COMPUTED SIMILARLY FOR EVERY TWO HOURS OF EACH DAY. UPON COMPLETION OF 12 MONTH MEASUREMENTS, ATTEMPTS WILL BE MADE TO CORRELATE THE TWO HOUR DATA BY USING AN ANGSTROM EQUATION.

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00000843
PROJECT TITLE
SOLAR DEMONSTRATION HOME
INVESTIGATORS
RICHARD C. BOURNE / ROGER EIGENBERG / BING CHEN
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, DEPT. OF CONSTRUCTION MANAGEMENT
LINCOLN, NE 68588
PRIMARY SPONSOR
LINCOLN ELECTRIC SYSTEM
SECONDARY SPONSOR(S)
UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER
PRIMARY FUNDING AMOUNT
22,500
SECONDARY FUNDING AMOUNT(S)
7,500
TIME FRAME
JAN, 1975 TO OCT., 1977
LOCATION
NE
ABSTRACT

OBJECTIVES: THE OBJECTIVE OF THE PROJECT IS TO DEMONSTRATE A MODERATE COST SINGLE FAMILY DWELLING UTILIZING A UNIQUE CONCEPT FOR SOLAR SPACE HEATING.

RESULTS: CONSTRUCTION OF THE HOME WAS COMPLETED OCT. 1, 1975. THE CONCEPT USES A HEAT PUMP IN CONJUNCTION WITH A SUNLIT ATTIC SPACE TO CAPTURE SOLAR ENERGY STORAGE IN THE FORM OF HEATED WATER. THROUGH A PUMPED CIRCULATING LOOP, HEATED WATER PASSES THROUGH A WATER COIL TO HEAT FORCED AIR. INSTRUMENTATION IS PROVIDED TO MONITOR ELECTRICAL CONSUMPTION OF ALL MAJOR HEATING SYSTEM COMPONENTS AS WELL AS TO RECORD TEMPERATURE DATA FOR 24 LOCATIONS WITHIN THE HOUSE AND HEATING SYSTEM.

SYSTEM HAS DEMONSTRATED ENERGY SAVINGS AND TOTAL OFF-PEAK SUMMER COOLING. CURRENT WORK INCLUDES ADDITIONAL MONITORING EQUIPMENT AND IMPROVED SYSTEM CONTROLS.

REPORTS AND PUBLICATIONS
A VOLUME-COLLECTOR HEAT PUMP DEMONSTRATION HOUSE. PRESENTED AT ISES CONFERENCE. JULY 1975
FIRST WINTER PERFORMANCE REPORT--2ND ANNUAL HEAT PUMP CONFERENCE. OKLA. STATE UNIV. OCT. 1976
FIRST SUMMER PERFORMANCE REPORT--SOLAR COOLING & HEATING FORM CERI. MIAMI. DEC. 1976.

*****

00000844
PROJECT TITLE
FUELS FROM BIOMASS
INVESTIGATORS
DR. WILLIAM A SCHELLER
RESEARCH INSTITUTION
UNIV. OF NEBRASKA. DEPT. OF CHEMICAL ENG.
LINCOLN, NE 68588
PRIMARY SPONSOR
NEBRASKA AG. PRODUCTS INDUSTRIAL UTILIZATION COMMITTEE
SECONDARY SPONSOR(S)
UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER
TIME FRAME
SEPT. 1974 TO CONTINUING
LOCATION
NE
ABSTRACT

THE UTILIZATION OF SOLAR ENERGY IN THE PRODUCTION OF PLANT MATERIALS AS AN INTERMEDIATE TO ENERGY PRODUCTION TODAY IS THE MOST ECONOMICAL MEANS FOR UTILIZING SOLAR ENERGY. ALTHOUGH THE EFFICIENCY IN THE

PHOTOSYNTHESIS PROCESS IS LOW, LAND COSTS AND PRODUCTION COSTS IN THE UNITED STATES ARE SUCH THAT BIOMASS AS AN ENERGY SOURCE IS MORE ATTRACTIVE THAN THE MORE EXOTIC METHODS FOR CONVERTING SOLAR ENERGY E.G. SOLAR CELLS. A NUMBER OF ROUTES ARE AVAILABLE FOR THE CONVERSION OF BIOMASS TO ENERGY, INCLUDING DIRECT COMBUSTION, PYROLYSIS DIGESTION, AND FERMENTATION. WE HAVE PREPARED A DETAILED NET ENERGY ANALYSIS OF ETHANOL PRODUCTION BY FERMENTATION INCLUDING THE FARMING ASSOCIATED WITH GRAIN PRODUCTION. WITH APPROPRIATE UTILIZATION OF A PORTION OF THE FIELD WASTES THIS SYSTEM IS CAPABLE OF INTRODUCING NEW ENERGY INTO THE ECONOMY. WE HAVE ALSO PREPARED A PRELIMINARY PROCESS DESIGN AND ECONOMIC ANALYSIS OF THE ENZYMATIC HYDROLYSIS OF CELLULOSE TO SUGARS. WHILE NOT ECONOMICALLY ATTRACTIVE UNDER PRESENT STATE-OF-THE-ART, THE ANALYSIS HAS REVEALED THAT SIGNIFICANT RESEARCH IN THE AREA OF ENZYME PRODUCTION, RECOVERY, AND IMMOBILIZATION IS NEEDED TO IMPROVE THE PROCESS ECONOMICS. WITH ADDITIONAL FUNDING WE PLAN FURTHER PROCESS STUDIES AND LABORATORY RESEARCH.

STUDY AFFILIATION

THIS PROJECT IS RELATED TO 'TWO MILLION MILE GASOHOL ROAD TEST,' UNIV. OF NEBRASKA, DEPT. OF CHEMICAL ENGINEERING, SERIAL NUMBER 00000534. ERIS QUARTERLY REPORTS, VOL. 1, NO. 3, MAY, 1976.

REPORTS AND PUBLICATIONS

WM. A SCHELLER AND BRIAN J. MOHR. NET ENERGY ANALYSIS OF ETHANOL PRODUCTION. 171ST NATL. MEETING OF THE ACS, NEW YORK, NY.

WILLIAM A SCHELLER AND BRIAN J. MOHR. STATE-OF-THE-ART REPORT AND LITERATURE SURVEY OF THE ENZYMATIC DECOMPOSITION OF CELLULOSE. CHEM. ENGR., UN-L. 1976.

NEBRASKA SERI PROPOSAL. SECTION K, PP. 22-28. 1976.

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00000845

PROJECT TITLE

WIND AS A SUPPLEMENTAL ENERGY SOURCE

INVESTIGATORS

JACK KRUEGER

RESEARCH INSTITUTION

UNIV. OF NORTH DAKOTA, DEPT. OF ELECTRICAL ENG. / UNIVERSITY STATION / GRAND FORKS, ND 58202

PRIMARY SPONSOR

PERSONNEL RESEARCH

TIME FRAME

NOV. 1973 TO NOV. 1977

LOCATION

ND

ABSTRACT

OBJECTIVE: TO PROVIDE A LOW-COST WIND COLLECTION DEVICE THAT WOULD ENABLE SUPPLEMENTATION OF ENERGY NEEDS WITH WIND POWER.

METHODOLOGY: TO EVALUATE DIFFERENT DESIGNS OF WIND ENERGY EXTRACTION DEVICES (WINDMILL BLADES), IN TERMS OF THEIR BEING EFFICIENT IN CONVERTING WIND ENERGY INTO OTHER USEABLE FORMS OF ENERGY, SUCH AS ELECTRICAL ENERGY OR HEAT ENERGY.

APPLICATION OF WORK: AN ECONOMICALLY FEASIBLE WINDMILL WOULD ALLOW HOMEOWNERS ACROSS THE STATE TO SUPPLEMENT THEIR HEAT ENERGY REQUIREMENTS WITH WIND POWER. IT IS IMPORTANT TO UNDERSTAND THE STRESS ON SUPPLEMENT, AS THE PROJECT DOES NOT ENVISION WIND POWER AS CAPABLE OF MEETING TOTAL ENERGY REQUIREMENTS OF A FAMILY.

PROGRESS: WIND ENERGY HAS BEEN EVALUATED OVER A YEARS TIME AND HAS BEEN FOUND TO BE A VIABLE SUPPLEMENTAL ENERGY SOURCE. SEVERAL DESIGNS HAVE BEEN TESTED. A COMPARATIVELY SMALL WIND-ELECTRIC GENERATOR UNIT CAN PROVIDE FROM 20 TO 40 PER CENT OF A FAMILY'S SPACE HEATING NEEDS IN NORTH DAKOTA. THE SYSTEMS THAT HAVE BEEN DESIGNED STRESS SIMPLICITY; NO SPEED OF VOLTAGE CONTROL DEVICES ARE USED, PER SE; ALL WIND VELOCITIES ABOVE THRESHOLD OF 8 MILES PER HOUR ARE CONVERTED TO USEABLE ENERGY.

REPORTS AND PUBLICATIONS

THE EVALUATION OF WIND ENERGY IN NORTH DAKOTA. ENGINEERING EXP. STATION, UNIV. OF NORTH DAKOTA. 1976.

THE DESIGN AND CONSTRUCTION OF A HIGH SPEED TWO BLADE PROPELLOR TYPE WINDMILL FOR SUPPLEMENTAL ELECTRIC HEATING. KRUEGER ENGINEERING. 1976.

THE DESIGN AND CONSTRUCTION OF A HIGH SPEED WINDMILL FOR SUPPLEMENTAL ELECTRIC HEATING. ENGINEERING EXP. STATION, UNIV. OF NORTH DAKOTA. 1976.

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00000846

PROJECT TITLE

GEOTHERMAL APPLICATIONS ON THE MADISON (PAHASAPA) AQUIFER SYSTEM IN SOUTH DAKOTA

INVESTIGATORS

JACK A. REDDEN / DR. J. P. GRIES

RESEARCH INSTITUTION

SOUTH DAKOTA SCHOOL OF MINES & TECH / RAPID CITY, SD

COOPERATOR

R. W. BECK & ASSOCIATES / DENVER CO.
RUSHMORE ELECTRIC POWER COOPERATIVE / RAPID CITY, SD

PRIMARY SPONSOR

U.S. ERDA

SECUNDARY SPONSOR(S)

SOUTH DAKOTA SCHOOL OF MINES & TECH.

PRIMARY FUNDING AMOUNT

123,425

SECONDARY FUNDING AMOUNT(S)
1,235
TIME FRAME
SEPT. 1976 TO AUG. 1977
LOCATION
SD
ABSTRACT

SDSM&T PERSONNEL IN CONJUNCTION WITH INDICATED SUBCONTRACTORS WILL COLLECT ALL AVAILABLE DATA ON THE MADISON AQUIFER RESERVOIR IN SOUTH DAKOTA TO DEVELOP A MODEL OF EXPECTED YIELD,DEPTHS, TEMPERATURES, WATER COMPOSITIONS, AND RE-INJECTION CHARACTERISTICS. THESE PARAMETERS WILL BE UTILIZED IN DEVELOPING DESIGN CONSTRAINTS RELATIVE TO FUTURE UTILIZATION OF THERMAL WATERS IN EXCESS OF 50 DEGREES C FOR POSSIBLE FUTURE SPACE HEATING UTILIZATION IN SMALL TOWNS, HOUSING DEVELOPMENTS ON RESERVATIONS, OR OTHER INDUSTRIAL USE INCLUDING AGRIBUSINESS. RETROFIT COSTS IN EXISTING POPULATION CENTERS ABOVE THE AQUIFER WILL ALSO BE CONSIDERED IN TERMS OF FUTURE ENERGY COSTS. MECHANISMS OF COOPERATIVE DELIVERY SYSTEMS AND LEGISLATIVE NEEDS WILL ALSO BE CONSIDERED.

REPORTS AND PUBLICATIONS
QUARTERLY REPORTS TO ERDA, FINAL REPORT TO ERDA, OUTSIDE PUBLICATIONS.

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00000847
PROJECT TITLE
COMMERCIAL INTEGRATED DEMONSTRATION PROJECT, VISITOR CENTER, MOUNT RUSHMORE NATIONAL MEMORIAL
INVESTIGATORS
DR. JACK L. REDDEN / DR. C. W. CHIANG
RESEARCH INSTITUTION
SOUTH DAKOTA SCHOOL OF MINES & TECH. / RAPID CITY, SD
COOPERATOR
SPITZNAGEL PARTNERS, INC. / MOUNT RUSHMORE NATIONAL MEMORIAL/ HONEYWELL ENERGY SYSTEMS CENTER, MINNEAPOLIS
PRIMARY SPONSOR
U.S. ERDA
SECONDARY SPONSOR(S)
SOUTH DAKOTA SCHOOL OF MINES & TECH.
PRIMARY FUNDING AMOUNT
228,280
SECONDARY FUNDING AMOUNT(S)
934
TIME FRAME
JUNE 1976 TO DEC. 1976
LOCATION
SD
ABSTRACT

THIS JOINT PROJECT DEMONSTRATES THE APPLICATION OF SOLAR HEATING AND PARTIAL COOLING TO THE EXISTING VISITOR CENTER OF THE MOUNT RUSHMORE NATIONAL MEMORIAL. MAIN OBJECTIVES ARE TO STIMULATE GENERAL PUBLIC INTEREST BY APPLICATION OF SOLAR HEATING AND COOLING TO A PUBLIC BUILDING OF A HIGH NATIONAL VISIBILITY, UTILIZE BEST TALENTS OF ALL LOCAL SECTORS, AND DEMONSTRATE THE POTENTIAL OF SOLAR ENERGY IN THE NORTHERN PLAINS.

REPORTS AND PUBLICATIONS
EVALUATION OF SOLAR HEATING AT MOUNT RUSHMORE VISITORS CENTER.

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00000848
PROJECT TITLE
SOLAR AND GEOTHERMAL FEASIBILITY STUDY OF SPACE HEATING FOR GREENHOUSES AND/OR LOW-INCOME HOUSING
INVESTIGATORS
DR. JACK A. REDDEN / DR. C. W. CHIANG
RESEARCH INSTITUTION
SOUTH DAKOTA SCHOOL OF MINES & TECH.
RAPID CITY, SD 57701
PRIMARY SPONSOR
WESTERN SOUTH DAKOTA COMMUNITY ACTION, INC.
PRIMARY FUNDING AMOUNT
7500
TIME FRAME
NOV. 1976 TO NOV. 1977
LOCATION
SD
ABSTRACT

SUPPORT OF TWO GRADUATE ASSISTANTS TO REVIEW FEASIBILITY OF SOLAR AND GEOTHERMAL ENERGY OF WESTERN SOUTH DAKOTA FOR SPACE HEATING APPLICATIONS USING EXISTING TECHNOLOGY. SINGLE DEMONSTRATION MODEL MAY BE DEVELOPED.

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00000849
PROJECT TITLE
ENERGY FROM HUMID AIR
INVESTIGATORS
DR. JACK A. REDDEN / DR. THOMAS K. OLIVER
RESEARCH INSTITUTION
SOUTH DAKOTA SCHOOL OF MINES & TECH. / RAPID CITY, SD
PRIMARY SPONSOR
U.S. ERDA
PRIMARY FUNDING AMOUNT
99,547

TIME FRAME

SEPT. 1976 TO DEC. 1977

LOCATION

SD

ABSTRACT

THE GOAL OF THE RESEARCH IS TO FIND A FEASIBLE METHOD OF EXTRACTING ENERGY FROM HUMID AIR. THE RESEARCH WILL INCLUDE COMPUTER MODELLING AND SA SERIES OF PARAMETRIC STUDIES TO FIND THE MOST DESIRABLE METHOD. ECONOMIC, AS WELL AS ENGINEERING FACTORS, WILL BE ANALYZED. IF THE PROJECT IS SUCCESSFUL, ALL OF THE HUMAN RACE WILL BE BENEFICIARIES.

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00000850

PROJECT TITLE

INVENTORY OF WYOMING HOT SPRINGS

INVESTIGATORS

TERRY TERREL (UW-DEPT. OF BOTANY)

RESEARCH INSTITUTION

WYOMING GEOLOGICAL SURVEY / P.O. BOX 3008 / UNIV. STATION/ LARAMIE, WY

PRIMARY SPONSOR

WYOMING GEOLOGICAL SURVEY

PRIMARY FUNDING AMOUNT

15,000

TIME FRAME

JUNE 1976 TO MAR. 1977

LOCATION

WY

ABSTRACT

THIS PROJECT CONSISTS OF AN INVENTORY OF WYOMING HOT AND WARM SPRINGS AND INCLUDES BASIC GEOGRAPHIC AND GEOLOGIC INFORMATION, TEMPERATURES, WATER CHEMISTRY AND FLOWS. TO DATE, 55 LOCALITIES HAVE BEEN INVESTIGATED. X-RAY ANALYSES ARE BEING RUN ON ROCK SAMPLES TO DETERMINE DEPOSIT MINERALOGY AND A BIOLOGIC ANALYSIS OF ALGAE IS BEING MADE.

THE HOT WATERS THEMSELVES ARE USEFUL WITH MINIMAL DEVELOPMENT FOR MINERAL BATHS, SPACE HEATING, IRRIGATION, AND EVEN FISH FARMING. THEIR USEFULNESS AS GEOTHERMAL INDICATORS HAS ONLY BEEN POORLY ANALYZED PREVIOUSLY.

A SUBSTANTIALLY MORE ACCURATE PICTURE OF THE RELATION OF WYOMING HOT SPRINGS TO HER GEOTHERMAL POTENTIAL SHOULD ALSO DEVELOP WITHIN THE PROJECT.

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00000851

PROJECT TITLE

SNAKE RIVER PLAIN-YELLOWSTONE GEOELECTRICAL STUDIES

PROJECT NUMBER

9730-01720

INVESTIGATORS

W. D. STANLEY

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.
BOX 25046, DENVER FED. CENTER / DENVER, CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

ID WY

ABSTRACT

THE GOAL OF THIS PROJECT IS TO ESTIMATE THE GEOTHERMAL POTENTIAL OF THE SNAKE RIVER PLAIN-YELLOWSTONE REGION AND TO DETERMINE THE NATURE OF CRUSTAL STRUCTURES IN THIS ANOMALOUS PART OF THE WESTERN U.S.

MAGNETOTELLURIC TECHNIQUES WILL BE USED TO MAP CONDUCTIVE STRUCTURES IN THE EARTH'S CRUST DOWN TO DEPTHS OF 20 KM IN ORDER TO DETERMINE THE DISTRIBUTION OF ISOTHERMS.

THE MAGNETOTELLURIC METHOD WILL BE REFINED AND INSTRUMENTATION AND DATA PROCESSING ADVANCES CONSIDERED TO BE STATE OF THE ART WILL BE ACCOMPLISHED.

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00000852

PROJECT TITLE

TILTING AT YELLOWSTONE

INVESTIGATORS

M. D. WOOD

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV. / 345 MIDDLEFIELD RD. / MENLO PARK, CA 94025

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

LOCATION

MT HI

ABSTRACT

AN ACCURATE INTERPRETATION OF THE 31% INCREASE IN PHASE LAG ON THE YELLOWSTONE CALDERA COMPARED TO WORLDWIDE DATA FROM NONVOLCANIC SITES MUST AWAIT A SIMILAR MEASUREMENT ON THE HOST ROCK AND ULTIMATELY COMPLETION OF THE PLANNED PROFILE ACROSS THE REGION. THE OBJECTIVE IS TO BOUND THE SEPARATION OF ELEVATION AND MASS CHANGES ASSOCIATED WITH THESE EARTHQUAKES AND THEIR AFTERSHOCKS. A SECONDARY OBJECTIVE IS TO DEVELOP FURTHER TECHNIQUES FOR IMMEDIATE MONITORING OF TIDAL GRAVITY FOLLOWING MAJOR EARTHQUAKES IN VOLCANIC AND GEOTHERMAL AREAS AS A CONTRIBUTION TO HAZARDS EVALUATION OF THE RECOVERABILITY OF GEOTHERMAL ENERGY DIRECTL FROM MOLTEN IGNEOUS SYSTEMS.

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00000853

PROJECT TITLE

KNOWN GEOTHERMAL RESOURCE AREAS GEOPHYSICS

INVESTIGATORS

D. R. MABEY

RESEARCH INSTITUTION

U.S. GEOLOGICAL SURVEY, OFFICE OF GEOCHEMISTRY & GEOPHYS.
BOX 25046 / DENVER FED CENTER / DENVER CO 80225

PRIMARY SPONSOR

U.S. GEOLOGICAL SURVEY, GEOLOGIC DIV.

TIME FRAME

JULY 1975 TO JUNE 1976

LOCATION

NV OR CA UT NM CO ID MT

ABSTRACT

GRAVITY, AUDIO-MAGNETO-TELLURIC. TELLURIC AND MAGNETIC DATA WILL BE OBTAINED IN KNOWN GEOTHERMAL RESOURCE AREAS SCHEDULED FOR COMPETITIVE LEASE SALE. THE GEOPHYSICAL DATA WILL BE INTERPRETED FOR USE IN EVALUATION PROCEDURES.

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00000854

PROJECT TITLE

USE OF SOLAR ENERGY IN A MODIFIED OPEN-FRONT SWINE FINISHING UNIT

PROJECT NUMBER

0042556
7090-12017-007-A

INVESTIGATORS

L. L. OLSON / J. A. DESHAZER / F. N. REECE
UNIV. OF NEBRASKA, DEPT. OF AGRICULTURAL ENGINEERING

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, AG. EXP. STATION

PRIMARY SPONSOR

U.S. AG. RESEARCH SERVICE, ALABAMA-NORTH MISSISSIPPI AREA

TIME FRAME

OCT. 1976 TO SEPT. 1977

LOCATION

NE

ABSTRACT

OBJECTIVE: DETERMINE THE FEASIBILITY OF USING SOLAR ENERGY FOR SUBSTITUTION OF FOSSIL FUEL IN HEATING SWINE FINISHING SHELTERS. DEVELOP SOLAR COLLECTORS WHICH WILL PERFORM THE DUAL FUNCTION OF COLLECTING SOLAR ENERGY FOR HEATING VENTILATION AIR AND RECLAIMING HEAT FROM EXHAUST VENTILATION AIR, AND DEVELOP MATHEMATICAL MODELS FOR USE IN DESIGNING SOLAR HEATING SYSTEMS FOR SWINE PRODUCTION SHELTERS.

APPROACH: A SWINE PRODUCTION HOUSE WILL BE EQUIPPED WITH SPECIALLY DESIGNED SOLAR COLLECTORS WHICH WILL HEAT VENTILATION AIR WITH SOLAR ENERGY AND RECLAIM LATENT AND SENSIBLE HEAT FROM EXHAUST VENTILATION AIR. COMPARISON WILL BE MADE BETWEEN THE EXPERIMENTAL UNIT AND A CONVENTIONAL PRODUCTION UNIT. EXISTING MATHEMATICAL MODELS WILL BE MODIFIED FOR PREDICTION OF DESIGN PARAMETERS FOR SOLAR-HEATED SWINE FACILITIES.

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00000855

PROJECT TITLE

SEASONAL VARIATION OF HEAT RELEASE FROM FOREST FUELS

INVESTIGATORS

DR. FRED SHAFIZADEH

RESEARCH INSTITUTION

UNIV. OF MONTANA, DEPT. OF WOOD CHEMISTRY
MISSOULA, MT 59812

PRIMARY SPONSOR

U.S. FOREST SERVICE, NORTHERN FOREST FIRE LAB.

PRIMARY FUNDING AMOUNT

32,000

TIME FRAME

MAY 1975 TO SEPT. 1976

LOCATION

MT

ABSTRACT

THE SEASONAL VARIATIONS IN THE TOTAL HEAT CONTENT AND HEAT CONTENT OF THE GASEOUS PYROLYSIS PRODUCTS HAVE BEEN DETERMINED BY BOMB CALORIMETRY AND THERMAL EVOLUTION ANALYSIS (TEA) USING A REACTION COULOMETER DETECTOR. THE ANALYSES WERE PERFORMED ON SAMPLES COLLECTED ON A WEEKLY BASIS DURING THE SUMMER MONTHS AND AT SELECTED INTERVALS DURING THE REMAINDER OF THE YEAR. THE RESULTS OF THIS STUDY WILL HELP EXPLAIN THE OBSERVED SEASONAL CHANGES IN CROWN FIRE POTENTIAL AND PROVIDE THE HEAT SOURCE PARAMETER NECESSARY FOR SUCCESSFUL MODELING OF CROWN FIRE POTENTIAL.

THE RESULTS SHOW THAT THE TEA METHOD IS A QUANTITATIVE METHOD OF MEASURING THE HEAT CONTENT OF GASEOUS PYROLYSIS PRODUCTS AS A FUNCTION OF TIME OR SAMPLE TEMPERATURE. THIS DATA CAN ALSO BE RELATED TO THE LOWER LIMIT OF FLAMMABILITY OF THE EVOLVED GASES TO DESCRIBE FUEL IGNITION CHARACTERISTICS. (MEAC)

STUDY AFFILIATION

THIS PROJECT IS A SUPPLEMENT TO 'EVALUATION OF UTILIZATION POTENTIAL OF DEAD TIMBER, BASED ON ANALYSIS OF CHEMICAL CHARACTERISTICS,' SERIAL NUMBER 00000686. ERIS QUARTERLY REPORT, VOL. 2, NO. 1. JANUARY. 1977.

REPORTS AND PUBLICATIONS

R. A. SUSOTT, W. F. DEGROOT AND F. SHAFIZADEH. HEAT CONTENT OF NATURAL FUELS, J. FIRE & FLAMMABILITY, 6

311-325. 1975.
F. SHAFIZADEH, P.P.S. CHIN AND W. F. DEGROOT. EFFECTIVE HEAT CONTENT OF GREEN FOREST FUELS. FOREST SCIENCE.
W. F. DEGROOT, T. W. AANERUD AND F. SHAFIZADEH. SEASONAL VARIATION IN HEAT CONTENT OF GREEN FOREST FUELS. FINAL REPORT TO U.S.D.A. FOREST SERVICE, NORTHERN FOREST FIRE LABORATORY, 1976.

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00000856

PROJECT TITLE

MONTANA RENEWABLE ENERGY STUDY

INVESTIGATORS

KYE COCHRAN (AERO) / JAMES H. NYBO (MEAC)

RESEARCH INSTITUTION

ALTERNATIVE ENERGY RESOURCES ORGANIZATION / BILLINGS, MT 59101
MONTANA ENERGY ADVISORY COUNCIL / HELENA, MT 59601

PRIMARY SPONSOR

ALTERNATIVE ENERGY RESOURCES ORGANIZATION
MONTANA ENERGY ADVISORY COUNCIL

PRIMARY FUNDING AMOUNT

2,500

TIME FRAME

MAR. 1976 TO JAN. 1977

LOCATION

MT

ABSTRACT

THE PURPOSE OF THIS PROJECT WAS TO PREPARE A VERY BASIC GUIDE TO RENEWABLE ENERGY RESOURCES IN MONTANA. INFORMATION WAS COLLECTED ON ENERGY CONSERVATION PRACTICES, SOLAR ENERGY, WIND POWER, BIOGAS, WOOD, WATER, AND ARCHITECTURE AND DESIGN. A LIST OF REFERENCES ON EACH OF THESE TOPICS WAS COMPLETED.

REPORTS AND PUBLICATIONS

MONTANA RENEWABLE ENERGY HANDBOOK

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00000857

PROJECT TITLE

WINDOWS AS SOLAR ENERGY COLLECTORS

INVESTIGATORS

RICHARD C. BOURNE

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, DEPT. OF CONSTRUCTION MANAGEMENT
LINCOLN, NE 68588

PRIMARY SPONSOR

NEBRASKA ENERGY OFFICE

SECONDARY SPONSOR(S)

UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER

PRIMARY FUNDING AMOUNT

12,525

SECONDARY FUNDING AMOUNT(S)

6,250

TIME FRAME

SEPT. 1974 TO MAY 1977

LOCATION

NE

ABSTRACT

WINDOWS ARE GENERALLY CONSIDERED A NEGATIVE FEATURE IN BUILDING ENERGY STUDIES, YET DIRECT SOLAR INPUT THROUGH SOUTH WINDOWS APPEARS TO HAVE THE POTENTIAL TO CONTRIBUTE SUBSTANTIAL WINTER HEATING VALUE. KEY PROJECT OBJECTIVE IS TO DEVELOP QUANTITATIVE TECHNIQUES, USEFUL FOR BUILDING DESIGN, TO PREDICT NET THERMAL PERFORMANCE OF WINDOWS. THE FIRST PHASE OF THE PROJECT TESTS CONVENTIONAL RESIDENTIAL WINDOWS, WHILE PHASE II TESTS ALTERNATIVE WINDOW CLOSURE SYSTEMS FOR REDUCING NIGHTTIME HEAT LOSS. BOTH PHASES ARE NOW OPERATIONAL, WITH CONTINUOUS DATA RECORDING SYSTEMS. INITIAL REPORTING WILL OCCUR BY MAY 15, 1977.

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00000858

PROJECT TITLE

OPTIMUM DESIGN OF WIND POWER STRUCTURES

INVESTIGATORS

C. WAYNE MARTIN

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, DEPT. OF ENGINEERING MECHANICS / LINCOLN, NE

PRIMARY SPONSOR

UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER

TIME FRAME

JAN. 1977 TO MAY 1977

LOCATION

NE

ABSTRACT

THE OBJECTIVE OF THIS PROJECT IS TO INVESTIGATE MINIMUM COST DESIGN OF WIND MACHINES WITH ROTORS OF 100 TO 200 FT. DIAMETER. PRELIMINARY CALCULATIONS INDICATE THAT BLADES CAN BE MADE FROM VERY HIGH STRENGTH PRESTRESSED LIGHTWEIGHT CONCRETE. IT IS EXPECTED THAT THIS TYPE OF BLADE, IF FEASIBLE, CAN BE MASS-PRODUCED AT MUCH LOWER COST THAN ALUMINUM BLADES. COST OF CONSTRUCTING WIND MACHINES IS THE PRIMARY DETERRENT TO THEIR USE, AND BLADES ARE THE MOST EXPENSIVE PART. OPTIMUM DESIGN OF SUPPORTING TOWERS CAN ALREADY BE ACCOMPLISHED WITH THE COMPUTER PROGRAM DEVELOPED FOR VALMONT INDUSTRIES.

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00000859

PROJECT TITLE

FLAT PLATE SOLAR THERMAL COLLECTORS USING LIQUID

INVESTIGATORS

LUH C. TAO

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, DEPT. OF CHEMICAL ENGINEERING / LINCOLN NE 68

PRIMARY SPONSOR

UNIV. OF NEBRASKA, ENGINEERING RESEARCH CENTER

TIME FRAME

CONTINUING

LOCATION

NE

ABSTRACT

THIS PROJECT IS TO STUDY THE EFFECT OF SURFACE ROUGHNESS AND ABSORPITIVITY ON THE FLOW OF FLUID IN COLLECTION OF SOLAR THERMAL ENERGY. WE FOUND SOME PRELIMINARY EVIDENCE OF SIGNIFICANT INCREASE OF EFFICIENCY IN A CORRUGATED PLATE. STUDY IS CONTINUING.

REPORTS AND PUBLICATIONS

C. Y. CHOI. EFFECT OF GRAPHITE PARTICLES ADDITION TO A CORRUGATED SURFACE WITH FLAT BLACK PAINT ON ITS EFFICIENCY OF SOLAR ENERGY COLLECTION BY FLOWING WATER. M. S. THESIS. JUNE 1975.

*****

00000860

PROJECT TITLE

BIOLOGICAL, BIOCHEMICAL AND CHEMICAL ENGINEERING TECHNIQUES APPLIED TO THE CONVERSION OF WASTE MATTER TO USEFUL PRODUCTS

INVESTIGATORS'

JOHN E. ROBBINS / DR. DAVID WARD / DR. DAVID SANDS

RESEARCH INSTITUTION

MONTANA STATE UNIV., DEPT. OF CHEMISTRY / BOZEMAN, MT 59715

PRIMARY SPONSOR

MONTANA BOARD OF NATURAL RESOURCES & CONSERVATION
MONTANA STATE UNIV., AG. EXP. STATION

PRIMARY FUNDING AMOUNT

19,480 (BNRC) / 3,000 (MSU) / TOTAL 22,480

TIME FRAME

MT

LOCATION

MT

ABSTRACT

THIS PROJECT DEFINES THE AREAS OF FUNDAMENTAL RESEARCH NEEDED TO EFFICIENTLY CONVERT WASTE MATERIAL TO FUEL AND OTHER PROJECTS. THE WASTE MATERIALS THAT COULD BE USED FOR SUCH PURPOSES ARE GARBAGE, MUNICIPAL SEWAGE AND AGRICULTURAL WASTE. THE AGRICULTURAL INDUSTRY OF THE STATE PRODUCES APPROXIMATELY 5 MILLION TONS OF WASTE STRAW PER ANNUM FROM WHEAT AND BARLEY. THE LIVESTOCK WASTE PRODUCED BY BEEF-FEED LOT OPERATION AND CONFINED ANIMAL PRODUCTION ARE UNESTIMATED AT PRESENT. THESE AGRICULTURAL WASTES ARE AMENABLE TO CONVERSION TO FUEL.

THE BENEFITS OF CONVERTING WASTE TO FUEL AND OTHER PRODUCTS ARE TWO-FOLD: 1. THE PRODUCTION OF QUALITY FUEL; METHANE AND 2. THE DECREASE IN WASTE THAT MUST BE DISPOSED OF AT A DIRECT COST TO THE PUBLIC OR AS AN UNDETERMINED COST TO ENVIRONMENTAL QUALITY. THERE IS ALSO POSSIBILITITES OF PRODUCTS THAT COULD BE DERIVED IN ADDITION TO THE FUEL. THESE MAY BE FERTILIZER AND LIVESTOCK FEED.

THIS STUDY HAS TWO BASIC OBJECTIVES FOR INCREASING THE EFFICIENCY OF FUEL PRODUCTION FROM WASTE MATERIAL: TO INCREASE THE NUMBER OF USEFUL PRODUCTS OBTAINABLE FROM THE PROCESS OF WASTE TREATMENT AND TO INSPECT THE POSSIBILITITES OF INCREASING THE METABOLIC EFFICIENCY OF THE MICROBIAL FLORA THAT ARE INVOLVED IN THE ANAEROBIC CONVERSION OF 'BIOMASS' (WASTE) TO USEFUL PRODUCTS.

THE INVESTIGATORS ON THIS PROJECT WELCOME REVIEW, QUESTIONS AND INSPECTION OF OUR PROPOSALS AND FACILITIES BY THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION AND THE GENERAL PUBLIC. (MEAC)

REPORTS AND PUBLICATIONS

ROBBINS & WEBER. JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY. MAY/JUNE ISSUE 1977.

*****

00000861

PROJECT TITLE

RENEWABLE ENERGY VIABILITY (REV) STUDY

INVESTIGATORS

FRANK CULVER / CAROLE MASSMAN

RESEARCH INSTITUTION

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
32 S. EWING / HELENA, MT 59601

PRIMARY SPONSOR

MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION

PRIMARY FUNDING AMOUNT

10,000

TIME FRAME

APRIL 1976 TO FEB. 1977

LOCATION

MT

ABSTRACT

THE OBJECTIVES OF THIS STUDY WILL BE TO: 1. PROJECT ENERGY DEMAND IN MONTANA BY EACH MAJOR END USE; 2. SHOW THE EFFECTS OF CONSERVATION AND TECHNOLOGICAL FIXES BY EACH MAJOR END USE; 3. SEPARATE ENERGY NEED CURVE INTO

FOSSIL FUEL ENERGY SOURCES (FUEL MIX) UNDER 'BUSINESS-AS-USUAL' ASSUMPTION FOR EACH MAJOR END USE; 4. DETERMINE THE PROPORTION OF EACH CONVENTIONAL SOURCE THAT COULD BE REPLACED BY RENEWABLE ENERGY SOURCES FOR EACH MAJOR END USE; 5. DETERMINE THE TOTAL USE OF EACH ALTERNATIVE ENERGY SOURCE BY SUMMING ITS USES; 6. DETERMINE POSITIVE AND NEGATIVE IMPLICATIONS OF THIS LEVEL OF USE OF EACH RENEWABLE ENERGY SOURCE; 7. BROADLY COMPARE 'BUSINESS-AS USUAL' PATH WITH RENEWABLE ENERGY EMPHASIS PATH; 8. DESCRIBE POLICIES, PROGRAMS, AND ACTIONS WHICH WILL BE NEEDED TO ACHIEVE OPTIMUM LEVEL OF CONSERVATION AND RENEWABLE ENERGY USE IN MONTANA. (MEAC)

REPORTS AND PUBLICATIONS

PRELIMINARY WORK PLAN. MONTHLY PROGRESS REPORTS WILL BE ISSUED DURING THE COURSE OF THE STUDY. FINAL REPORT WILL BE MADE AVAILABLE AT CONCLUSION OF STUDY.

00000862
PROJECT TITLE
SEISMO-TECTONIC EVALUATION
INVESTIGATORS
RAYMOND R. BURCHETT / MARVIN P. CARLSON / REX M. PETERSON
RESEARCH INSTITUTION
U.S. GEOLOGICAL SURVEY, CONSERVATION DIV.
PRIMARY SPONSOR
U.S. NUCLEAR REGULATORY COMMISSION
PRIMARY FUNDING AMOUNT
45,000
TIME FRAME
JULY 1976 TO JUNE 1977
LOCATION
NE KS OK
ABSTRACT
DETAILED STUDY OF NEMAHA RIDGE AREA IN SOUTHEAST NEBRASKA (COORDINATED WITH KANSAS AND OKLAHOMA) AS AN AID IN SITE EVALUATION FOR FUTURE POWER GENERATION PLANTS.

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00000863

PROJECT TITLE

BIOASSAY OF ALPINE MINE SPOILS

PROJECT NUMBER

A3C3-L10

INVESTIGATORS

RAY W. BROWN

RESEARCH INSTITUTION

U.S. FOREST SERVICE, INTERMTN. FOREST & RANGE EXP. STATION
860 N. 12TH EAST / LOGAN, UT 84321

PRIMARY SPONSOR

U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING
145 GRAND AVE. / BILLINGS, MT 59101

PRIMARY FUNDING AMOUNT

4,000/YEAR

TIME FRAME

NOV. 1975 TO CONTINUING

LOCATION

MT UT

ABSTRACT

SPOIL MATERIALS CONTAIN MANY CHARACTERISTICS AND CHEMICAL CONSTITUENTS THAT ARE LIMITING TO PLANT SURVIVAL AND GROWTH. BIOASSAY TECHNIQUES ARE BEING USED UNDER CONTROLLED GROWTH CHAMBER, GREENHOUSE, AND LABORATORY CONDITIONS TO EVALUATE THE IMPACTS OF NUTRIENT DEFICIENCIES, TOXIC HEAVY METALS, ACIDITY, AND OTHER SPOIL CHARACTERISTICS ON PLANT GERMINATION, DEVELOPMENT, AND GROWTH. SPOIL MATERIAL FROM ALPINE MINE DISTURBANCES, COLLECTED FROM THE UPPER ONE FOOT, IS BEING USED AS A GROWING MEDIUM FOR SEVERAL KEY PLANT SPECIES UNDER CONTROLLED CONDITIONS. FERTILIZERS, MULCHES, LIME, AND OTHER AMENDMENTS ARE BEING STUDIED TO DETERMINE THEIR EFFECTS ON PLANT GROWTH. RESULTS INDICATE THAT HEAVY ADDITIONS OF FERTILIZER AND ORGANIC MATTER ARE NEEDED TO INCREASE PLANT GROWTH TO ACCEPTABLE LEVELS FOR COVER AND PRODUCTION. ALSO, RECOMMENDATIONS WILL BE HIGHLY SITE-SPECIFIC SINCE SPOIL MATERIAL IS HIGHLY VARIABLE BETWEEN SITES OF ORIGIN.

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00000864

PROJECT TITLE

NON-GAME BIRD HABITAT ASSOCIATED WITH HAUL ROADS AND SURFACE MINING FOR BENTONITE CLAY

PROJECT NUMBER

RC-827 (RMF&RES) /16-607-CA (SDSU)

INVESTIGATORS

RAYMOND LINDER / TIM SCHARD

RESEARCH INSTITUTION

SOUTH DAKOTA STATE UNIV.

PRIMARY SPONSOR

U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD

SECONDARY SPONSOR(S)

SOUTH DAKOTA STATE UNIV.

PRIMARY FUNDING AMOUNT

24,400

SECONDARY FUNDING AMOUNT(S)

8,053

TIME FRAME

APR. 1974 TO NOV. 1976

LOCATION

SD WY

ABSTRACT

OBJECTIVES: 1. TO DETERMINE THE SPECIES OF NON-GAME BIRDS NESTING AND WINTERING ON VARIOUS AGED BENTONITE CLAY MINE SPOILS. 2. TO ESTIMATE AND COMPARE DENSITY AND DIVERSITY OF NESTING AND WINTERING BIRDS ON AREAS WITH HAUL ROADS AND VARIOUS AGED SPOILS TO SIMILAR LAND AREAS WITH NO MINING. 3. TO MEASURE AND EVALUATE VEGETATION AND OTHER IMPORTANT ENVIRONMENTAL VARIABLES ASSOCIATED WITH SPOILS AND HAUL ROADS THAT MIGHT BE CONTRIBUTING TO DIFFERENCES FOUND IN DENSITY AND DIVERSITY OF BIRDS. 4. TO DEVELOP SUGGESTIVE MANAGEMENT GUIDELINES FOR MINE SPOILS, HAUL ROADS, AND ROAD RIGHT-OF-WAYS IN RELATION TO AVIAN DENSITY AND DIVERSITY.

METHODS: VEGETATION MEASUREMENTS WILL INCLUDE HEIGHT, % GROUND COVER, NUMBER OF LAYERS, TREE AND SHRUB VOLUMES AND OTHER MEASUREMENTS DEEMED ADVISABLE. THE METHOD OF EMLIN (1971), (AUK 88:323-342) WILL BE USED TO ESTIMATE BIRD DENSITY AND DIVERSITY. STEPWISE MULTIPLE REGRESSION DISCRIMINANT FUNCTION ANALYSIS OF PRINCIPLE COMPONENT WILL BE USED TO EVALUATE EFFECTS OF HABITAT VARIABLES.

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00000865

PROJECT TITLE

UPLAND HABITAT PRESERVATION RELATED TO ENERGY DEVELOPMENT UNDER MODERN ENVIRONMENTAL LAW

PROJECT NUMBER

1533

INVESTIGATORS

GARY DUSEK

RESEARCH INSTITUTION

MONTANA DEPT. OF FISH AND GAME / ROUNDUP, MT

PRIMARY SPONSOR

U.S. FISH & WILDLIFE SERV.

PRIMARY FUNDING AMOUNT

90,000

TIME FRAME
SEPT. 1976 TO AUG. 1979
LOCATION
MT
ABSTRACT

SPECIFIC OBJECTIVES OF THIS STUDY ARE: 1. TO INITIATE THE NECESSARY STUDIES TO GATHER THE BASELINE DATA NEEDED TO MONITOR THE POTENTIAL EFFECTS OF SOLUTION MINING ON THE VEGETATION AND WILDLIFE RESOURCES. 2. TO IDENTIFY POTENTIAL CONFLICTS BETWEEN SOLUTION MINING TECHNIQUES AND WILDLIFE POPULATIONS AND DEVELOP SUGGESTIONS OR ALTERNATIVE METHODS FOR ELIMINATING OR REDUCING THOSE CONFLICTS. 3. TO ASSESS THE POTENTIAL OF THE LONG PINES AREAS AS A MODEL DEMONSTRATION SITE FOR RESEARCHING THE COMPATIBILITY OF WILDLIFE AND MINING. 4. TO DEVELOP OR SUGGEST REVEGETATION TECHNIQUES THAT ARE SPECIFIC FOR SOLUTION MINING OR OTHER DISTURBANCES ASSOCIATED WITH MINING. 5. TO MONITOR THE SECONDARY EFFECTS OF MINING ON WILDLIFE POPULATIONS AND DEVELOP MEANS FOR REDUCING THOSE CONFLICTS. (MEAC)

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00000866
PROJECT TITLE
USE OF WOOD CHIPS AS A MULCH IN THE RECLAMATION OF BENTONITE MINE SPOILS
PROJECT NUMBER
RC-829
INVESTIGATORS
B. R. MABEY (CSU, DEPT. OF AGRONOMY) / ARDELL J. BJUGSTAD / C. E. BOLDT
RESEARCH INSTITUTION
U.S. FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD 57701
PRIMARY SPONSOR
U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING
145 GRAND / BILLINGS, MT 59101
PRIMARY FUNDING AMOUNT
8,000
TIME FRAME
JUNE 1976 TO JUNE 1977
LOCATION
WY
ABSTRACT

OBJECTIVES: TO DETERMINE 1. WHETHER WATER SOLUBLE EXTRACTS FROM CHIPPED PONDEROSA PINE RESIDUES INHIBIT SURVIVAL AND GROWTH OF GRASSES POTTED IN BENTONITE SPOIL; AND, 2. WHETHER BENTONITE SPOIL, WITH OR WITHOUT A PINE CHIP MULCH, REQUIRES NITROGEN SUPPLEMENTS TO SUSTAIN OR IMPROVE GRASS GROWTH.
METHODS: FOUR SPECIES OF NATIVE, PERENNIAL GRASSES -- SELECTED AS PROMISING FOR SPOIL REVEGETATION -- WILL BE GREENHOUSE-GROWN IN SMALL CONTAINERS AND TRANSPLANTED AS PLUGS INTO POTS FILLED WITH TYPICAL BENTONITE SPOIL MATERIALS. REPLICATED TESTS WILL BE MADE OF 6 SUPPLEMENTAL NITROGEN TREATMENTS (THREE LEVELS EACH OF ORGANIC AND INORGANIC FORMS) APPLIED TO POTS WITH AND WITHOUT A SURFACE MULCH OF CHIPPED SAWMILL RESIDUES (PONDEROSA PINE). CONTROL POTS WILL RECEIVE NEITHER MULCH NOR SUPPLEMENTAL N. POTTED GRASSES WILL BE GROWN IN A GREENHOUSE UNDER CONTROLLED (FAVORABLE) MOISTURE REGIME FOR 60 TO 90 DAYS. AT THE END OF THE TEST PERIOD, AERIAL PARTS OF SURVIVING GRASS PLANTS WILL BE HARVESTED, OVEN DRIED, AND WEIGHED. MEAN DRY WEIGHTS WILL BE COMPARED STATISTICALLY TO DETERMINE SIGNIFICANCE OF DIFFERENCES IN GRASS SURVIVAL AND GROWTH, IF ANY, ASSOCIATED WITH MULCH AND NITROGEN TREATMENTS.

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00000867
PROJECT TITLE
SURVIVAL AND GROWTH OF CONTAINERIZED VS. BARE ROOT SHRUB AND TREE PLANTING STOCK ON BENTONITE SPOILS IN NORTHEAST WYOMING
PROJECT NUMBER
RM-817
INVESTIGATORS
HOWARD K. ORR / ARDELL J. BJUGSTAD / ROGER KERBS
RESEARCH INSTITUTION
U.S FOREST SERVICE, ROCKY MTN. FOREST & RANGE EXP. STATION
RAPID CITY, SD 57701
COOPERATOR
AMERICAN COLLOID CO. / U.S. SOIL CONSERVATION SERVICE /
U.S. FOREST SERVICE, MEDICINE BOW NATIONAL FOREST /
PRIMARY SPONSOR
U.S. FOREST SERVICE, SURFACE ENVIRONMENT AND MINING
145 GRAND AVE. / BILLINGS, MT 59101
PRIMARY FUNDING AMOUNT
1976 - 5400 / 1977 - 3100 / 1978 - 3000 / TOTAL - 11,500
TIME FRAME
JUNE 1976 TO AUG. 1978
LOCATION
WY - NW1/4SE1/4/SEC. 36, T. 56N., R.61 W., IN CROOK CO.
ABSTRACT

OBJECTIVES: TO DETERMINE IF USE OF CONTAINER-GROWN STOCK WILL, BY ITSELF, RESULT IN HIGHER SUCCESS AND MORE CONSISTENT ESTABLISHMENT OF SELECTED SPECIES THAN USE OF BARE ROOT STOCK.
METHODS: STUDY INVOLVES 4 SHRUB AND 3 TREE SPECIES, CONTAINER GROWN AND BARE ROOT PLANTING STOCK, ONE ROW OF EACH SPECIES PER BLOCK, 1/2 OF EACH ROW PLANTED WITH BARE ROOT STOCK AND 1/2 PLANTED WITH CONTAINER-GROWN

STOCK, 5 BLOCK REPLICATION. THE SPECIES ARE GREEN ASH, PONDEROSA PINE, ROCKY MOUNTAIN JUNIPER, RUSSIAN OLIVE, SILVER BUFFALOBERRY, SIBERIAN PEASHRUB, AND AMERICAN PLUM. PLANTS WILL BE SET 6 FEET APART IN ROWS 8 FEET APART. EACH ROW WILL BE DIVIDED INTO THREE 12-PLANT SEGMENTS, AND 1/2 OF EACH SEGMENT WILL, AT RANDOM, BE ASSIGNED CONTAINER-GROWN STOCK AND THE OTHER 1/2 WILL BE PLANTED WITH BARE ROOT STOCK. IN ALL, 5 BLOCKS THERE WILL BE A TOTAL OF 90 BARE ROOT AND 90 CONTAINER-GROWN PLANTS OF EACH SPECIES. STOCK WILL BE PLANTED IN LATE APRIL TO EARLY MAY. PRIOR TO PLANTING, EACH SPOT WILL BE HOED TO CLEAR COMPETING VEGETATION. A 1 TO 1 1/2 FOOT WIDE SWATH WILL BE ROTO-TILLED EACH SIDE OF EACH PLANTING ROW. SIMAZINE WILL BE APPLIED TO PLANTING SPOTS IMMEDIATELY AFTER PLANTING FOR PREEMERGENT CONTROL OF GERMINATING SEED. PLANT HEIGHTS WILL BE MEASURED FOR DETERMINATION OF ANNUAL GROWTH AND EXTENT OF BROWSING. EVIDENCE OF BROWSING WILL BE NOTED. PRECIPITATION WILL BE MEASURED YEAR-LONG.

00000868

PROJECT TITLE

MONTANA ENERGY CONSERVATION PLAN

INVESTIGATORS

JERRY TONER (MEAC) / JOHN MCBRIDE (MERDI)

RESEARCH INSTITUTION

MONTANA ENERGY ADVISORY COUNCIL

COOPERATOR

MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.

PRIMARY SPONSOR

U.S. FEDERAL ENERGY ADMINISTRATION

PRIMARY FUNDING AMOUNT

53,100

TIME FRAME

OCT. 1976 TO APR. 1977

LOCATION

MT

ABSTRACT

PROJECT OBJECTIVES: 1. ESTABLISH A SET OF ENERGY CONSERVATION OPTIONS FOR THE STAT OF MONTANA; 2. PERFORM ANALYSIS OF CONSERVATION OPTIONS IDENTIFIED ABOVE; 3. REVIEW EXISTING STATUTES, POLICIES, PROGRAMS AND CODES OF MONTANA AND OTHER STATES THAT AFFECT ENERGY CONSERVATION AND SUMMARIZE RELEVANT ENERGY LITERATURE WHICH MAY ACHIEVE GOALS OF REDUCED ENERGY CONSUMPTION AND INCREASED UTILIZATION OF RENEWABLE RESOURCES; 4. DETERMINE THE IMPACTS OF PROGRAM MEASURES TO BE INCLUDED IN THE FINAL PLAN; 5. DEVELOP THE FINAL INTEGRATED STATE ENERGY CONSERVATION PLAN AND THE PLAN'S IMPLEMENTATION GUIDELINES.

REPORTS AND PUBLICATIONS

INTERIM REPORT SUMMARY - THE MONTANA ENERGY CONSERVATION PLAN. NOVEMBER 1976

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00000869

PROJECT TITLE

ANALYSIS OF CONSUMER PERCEPTION OF RATE SCHEDULES IN THE ELECTRIC UTILITY INDUSTRY

INVESTIGATORS

DR. DAVID M. AMBROSE

RESEARCH INSTITUTION

UNIV. OF NEBRASKA AT OMAHA, COLLEGE OF BUSINESS ADMIN.
OMAHA, NE

PRIMARY FUNDING AMOUNT

6,000

TIME FRAME

SEPT. 1976 TO SEPT. 1977

LOCATION

NE

ABSTRACT

ELECTRICITY CONSERVATION AMONG RESIDENTIAL USERS IS PARTIALLY DEPENDENT UPON THE ELASTICITY OF DEMAND. HOWEVER, CONSERVATION WILL RESULT ONLY IF THE CONSUMER IS KNOWLEDGEABLE OF THE COMPOSITION OF THE RATE SCHEDULE. AS RESIDENTIAL SCHEDULES HAVE FREQUENTLY BEEN PROGRESSIVE IN STRUCTURE, THE CONSERVATIONIST ARGUES THAT A REVISION TO A REGRESSION SCHEDULE WILL RESULT IN A SUBSTANTIAL REDUCTION OF USAGE. HOWEVER, THE ARGUMENT OF THE RESEARCH IS THAT KNOWLEDGE OF RATE STRUCTURES IS SO LIMITED THAT NO APPRECIABLE CHANGE OF DEMAND WILL RESULT SOLELY THROUGH A CHANGE TO A REGRESSIVE FORMULA.

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00000870

PROJECT TITLE

CONTINGENCY PLAN FOR CARPOOLING IN THE HELENA URBAN AREA

INVESTIGATORS

GARY FUNKHAUSER

RESEARCH INSTITUTION

HELENA CITY ENGINEER'S OFFICE / HELENA, MT 59601

PRIMARY SPONSOR

U.S. DEPT. OF TRANSPORTATION

SECONDARY SPONSOR(S)

MONTANA DEPT. OF HIGHWAYS

PRIMARY FUNDING AMOUNT

1,800

SECONDARY FUNDING AMOUNT(S)

200

TIME FRAME

JAN. 1976 TO MAY 1976

STATUS

COMPLETED MAY, 1976

LOCATION

MT

ABSTRACT

THIS PROJECT IS DESIGNED TO DEVELOP A CONTINGENCY PLAN FOR A CARPOOLING PROGRAM FOR THE HELENA URBAN AREA. THE OBJECTIVES OF THE CARPOOLING PROGRAM ARE TO ENCOURAGE THE USE OF CARPOOLS AND PUBLIC TRANSIT IN THE HELENA AREA, AND THUS, INCREASE THE AVERAGE AUTOMOBILE OCCUPANCY DURING THE PEAK TRAFFIC, OR RUSH HOURS. WITH THIS REDUCTION IN VEHICLES AND VEHICLE MILES OF TRAVEL THE END RESULT IS A SAVINGS OF FUEL.
THE CARPOOLING PROGRAM WOULD BE ACCOMPLISHED BY 4 PHASES:
1. PHASE I - INITIAL PREPARATION PHASE WILL DETERMINE WHETHER THERE IS AN INTEREST IN A CARPOOLING PROGRAM.
2. PHASE II - MATCHING PHASE WILL CONSIST OF DEVELOPING PUBLIC INFORMATION MATERIAL AND PREPARING THE NECESSARY FORMS NEEDED FOR INPUT TO MAKE THE PHYSICAL MATCH.

3. PHASE III - IMPLEMENTATION PHASE WILL CONSIST OF INFORMING LOCAL EMPLOYEES OF THE PROPOSED PROGRAM, COLLECTING TRAVEL DESIRE DATA, AND UTILIZING THE MONTANA DEPT. OF HIGHWAYS COMPUTER TO STORE DATA FURNISHED BY THE PROGRAMS PARTICIPANTS. 4. PHASE IV - EVALUATION PHASE WILL DETERMINE EFFECTIVENESS OF PROGRAM IN TERMS OF NUMBER OF CARPOOLS FORMED AND BY VEHICLE OCCUPANCY RATE CHECKS. BECAUSE NO FUEL SHORTAGE HAS OCCURRED LOCALLY TO DATE, IT IS INTENDED TO COMPLETE ONLY THE INITIAL PREPARATION PHASE OF THE PROGRAM AT THIS TIME. ATTEMPTS TO FULLY IMPLEMENT AT THIS TIME ARE NOT CONSIDERED POSSIBLE. (MEAC)

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00000871

PROJECT TITLE

CONTINGENCY PLAN FOR CARPOOLING IN THE BILLINGS URBAN AREA

INVESTIGATORS

NORMAN K. GUTCHER

RESEARCH INSTITUTION

BILLINGS-YELLOWSTONE CITY COUNTY PLANNING BOARD
CITY HALL / BILLINGS, MT 59101

PRIMARY SPONSOR

U.S. DEPT. OF TRANSPORTATION

SECONDARY SPONSOR(S)

MONTANA DEPT. OF HIGHWAYS

PRIMARY FUNDING AMOUNT

1,800

SECONDARY FUNDING AMOUNT(S)

200

TIME FRAME

JAN. 1975 TO APR. 1975

STATUS

COMPLETED APR. 1975

LOCATION

MT

ABSTRACT

THIS PROJECT IS DESIGNED TO DEVELOP A CONTINGENCY PLAN FOR A CARPOOLING PROGRAM FOR THE BILLINGS URBAN AREA. THE OBJECTIVES OF THE CARPOOLING PROGRAM ARE TO ENCOURAGE THE USE OF CARPOOLS AND PUBLIC TRANSIT IN THE BILLINGS AREA, AND THUS, INCREASE THE AVERAGE AUTOMOBILE OCCUPANCY DURING THE PEAK TRAFFIC, OR 'RUSH HOURS.' WITH FEWER VEHICLES THERE WILL BE LESS VEHICLE MILES OF TRAVEL AND, CONSEQUENTLY A SAVINGS OF FUEL. THE CARPOOLING PROGRAM WILL HAVE THREE PHASES: 1. THE PREPARATION PHASE WHERE PUBLIC INFORMATION MATERIAL AND A COMPUTER MATCHING PROGRAM WILL BE DEVELOPED. 2. THE IMPLEMENTATION PHASE WHEN LOCAL BILLINGS AREA EMPLOYEES WILL BE INFORMED OF THE PROPOSED PROGRAM, TRAVEL DESIRE DATA WILL BE DEVELOPED, AND THE MONTANA DEPT. OF HIGHWAYS COMPUTER USED IN THE MATCHING PROCESS AND STORAGE OF DATA; AND 3. THE SURVEILLANCE AND EVALUATION PHASE WHEN THE EFFECTIVENESS OF THE PROGRAM WILL BE MEASURED IN TERMS OF THE NUMBER OF CARPOOLS FORMED AND BY VEHICLE OCCUPANCY RATE CHECKS.
BECAUSE NO FUEL SHORTAGE HAS OCCURRED LOCALLY TO DATE, IT IS INTENDED TO COMPLETE ONLY THE INITIAL PREPARATION PHASE OF THE PROGRAM AT THIS TIME. ATTEMPTS TO FULLY IMPLEMENT AT THIS TIME ARE NOT CONSIDERED POSSIBLE. (MEAC)

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00000872

PROJECT TITLE

CONTINGENCY PLAN FOR CARPOOLING IN THE GREAT FALLS URBAN AREA

INVESTIGATORS

JOHN RICHARDS

RESEARCH INSTITUTION

GREAT FALLS CITY COUNTY PLANNING BOARD

PRIMARY SPONSOR

U.S. DEPT. OF TRANSPORTATION

SECONDARY SPONSOR(S)

MONTANA DEPT. OF HIGHWAYS

PRIMARY FUNDING AMOUNT

1,800

SECONDARY FUNDING AMOUNT(S)

200

TIME FRAME

JAN. 1976 TO MAR. 1976

STATUS

COMPLETED MAR. 1976

LOCATION

MT

ABSTRACT

THIS PROJECT IS DESIGNED TO DEVELOP A CONTINGENCY PLAN FOR A CARPOOLING PROGRAM FOR THE GREAT FALLS URBAN AREA. THE PLAN IS INTENDED TO ENCOURAGE THE USE OF CARPOOLS IN THE GREAT FALLS AREA IN THE EVENT OF A FUEL SHORTAGE OR OTHER EMERGENCY, AND THUS INCREASE THE AVERAGE AUTOMOBILE OCCUPANCY DURING THE PEAK TRAFFIC, OR 'RUSH' HOURS. WITH FEWER VEHICLES, THERE WILL BE LESS VEHICLE MILES OF TRAVEL AND, CONSEQUENTLY, A SAVINGS OF FUEL. THE CARPOOLING PLAN IS TO BE ACCOMPLISHED IN THREE PHASES: 1. THE PREPARATION PHASE - THE FHWA COMPUTER MATCHING PROGRAM WILL BE ADOPTED TO THE DEPT. OF HIGHWAY'S COMPUTER IN HELENA, AND PUBLIC INFORMATION MATERIAL WILL BE DEVELOPED; 2. THE IMPLEMENTATION PHASE - DIRECT CONTACT WILL BE MADE WITH MAJOR EMPLOYERS FOR THE PURPOSES OF INFORMING THEIR EMPLOYEES OF THE CARPOOLING PROGRAM, TRAVEL DESIRE DATA WILL BE OBTAINED, AND THE MONTANA DEPT. OF HIGHWAY'S COMPUTER WILL BE USED IN THE

MATCHING PROCESS AND STORAGE OF DATA; AND 3. THE SURVEILLANCE AND EVALUATION PHASE - EFFECTIVENESS OF THE PROGRAM WILL BE MEASURED IN TERMS OF THE NUMBER OF CARPOOLS FORMED AND BY VEHICLE OCCUPANCY RATE CHECKS. (MEAC)

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00000873

PROJECT TITLE

CITIZEN'S ADVISORY COMMITTEE ON ENERGY

INVESTIGATORS

GENE MAHONEY

RESEARCH INSTITUTION

MONTANA OFFICE OF THE GOVERNOR / HELENA, MT 59601

COOPERATOR

MONTANA ENERGY ADVISORY COUNCIL / MONTANA ENVIRONMENTAL QUALITY COUNCIL

PRIMARY SPONSOR

MONTANA OFFICE OF THE GOVERNOR

TIME FRAME

MAR. 1976 TO CONTINUING

LOCATION

MT

ABSTRACT

THE CITIZEN'S ADVISORY COMMITTEE ON ENERGY WAS NAMED BY GOVERNOR THOMAS L. JUDGE IN EARLY 1976 TO MORE FULLY INVOLVE THE PEOPLE OF MONTANA IN GOVERNMENT DECISION-MAKING ON ENERGY ISSUES, PARTICULARLY CONSIDERATION OF COAL GASIFICATION. THE FIRST PROJECT OF THE COMMITTEE WAS TO ANALYZE THE FORECASTED NATURAL GAS SHORTAGES IN MONTANA AND A STUDY OF VARIOUS ALTERNATIVE SOLUTIONS TO THESE SHORTAGES.

THE CITIZEN'S ADVISORY COMMITTEE ESTABLISHED FOUR SUBCOMMITTEES TO ACCOMPLISH THEIR WORK. THE SUBCOMMITTEES STUDY: THE REMAINING NATURAL GAS RESERVES; ENERGY CONSERVATION; ALTERNATIVE TECHNOLOGIES; AND LEGAL ISSUES. (MEAC)

REPORTS AND PUBLICATIONS

REPORT TO THE 1977 LEGISLATURE BY THE CITIZEN'S ADVISORY COMMITTEE ON ENERGY, DECEMBER 1976.

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00000874

PROJECT TITLE

SAFETY, RELIABILITY, AND OPERATIONAL CHARACTERISTICS OF ELECTRICAL IRRIGATION EQUIPMENT

PROJECT NUMBER

0041008 / 3705-12200-002

INVESTIGATORS

L. E. STETSON

RESEARCH INSTITUTION

UNIV. OF NEBRASKA, DEPT. OF AGRICULTURAL ENGINEERING
KEIM HALL, ROOM 329 / LINCOLN, NE

PRIMARY SPONSOR

U.S. AG. RESEARCH SERVICE

TIME FRAME

OCT. 1976 TO SEPT. 1977

LOCATION

NE

ABSTRACT

OBJECTIVE: DETERMINE ELECTRICAL REQUIREMENTS AND OPERATIONAL CHARACTERISTICS OF IRRIGATION MACHINES AND DEVELOP GUIDELINES FOR OPERATION OF MACHINES NEAR OVERHEAD POWER LINES. DEVELOP SYSTEMS AND PROCEDURES NECESSARY TO INTEGRATE IRRIGATION SCHEDULING WITH ELECTRICAL DEMAND TO USE WATER AND ENERGY EFFICIENTLY. EVALUATE EFFECTS OF IRRIGATION-APPLIED CHEMICALS ON ELECTRICAL COMPONENTS. DEVELOP AND REFINE STANDARDS.

APPROACH: MEASURE ENERGY CONSUMPTION AND OPERATIONAL CHARACTERISTICS OF IRRIGATION MACHINES IN THE FIELD. INTEGRATE METHODS AND EQUIPMENT TO CONTROL ELECTRICAL DEMAND WITH IRRIGATION SCHEDULING. STUDY LABORATORY EXPOSURES OF ELECTRICAL COMPONENTS TO AGRICULTURAL CHEMICALS. SURVEY IRRIGATION MACHINES EVALUATE FIELD CORROSION EFFECTS AND DETERMINE NEEDS FOR FURTHER WORK ON STANDARDS.

PROGRESS: COOPERATIVE EFFORTS TO CONTROL PEAK ELECTRICAL DEMANDS BY IRRIGATION SCHEDULING WERE CONTINUED. INPUT FROM ARS INVOLVES ANALYSIS OF ELECTRICAL DEMAND REQUIREMENTS TO DETERMINE THE TIMING AND NUMBER OF IRRIGATION SYSTEMS THAT MUST BE CONTROLLED TO INFLUENCE THE POWER DEMANDS OF A PARTICULAR POWER DISTRICT. AN IRRIGATION MODEL HAS BEEN DEVELOPED TO ESTIMATE PROBABILITIES OF MOISTURE STRESS USING CLIMATIC DATA, SOILS DATA, AND IRRIGATION INPUT. OFF-PEAK SCHEDULING HAS BEEN USED BY ONE POWER DISTRICT FOR 2 YEARS. THE PEAK POWER DEMAND DECREASED BY 4% THE FIRST YEAR AND INCREASED 11% THE SECOND YEAR. OVER THE 2 YEAR PERIOD THE EFFECTIVE INCREASE IN POWER DEMAND WAS 6%. ALL OTHER POWER DISTRICTS IN NEBRASKA AVERAGED A 33% INCREASE IN POWER DEMAND OVER THE SAME 2 YEAR PERIOD WITH A RANGE OF 15% TO 78%.

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00000875

PROJECT TITLE

REGIONAL EVALUATION OF OFF-SEASON AGRICULTURAL USE OF WATER AND ENERGY RESOURCES

PROJECT NUMBER

B-052-SDAK

INVESTIGATORS

L. B. STONE (SDSU) / M. L. HORTON (SDSU) / T. L. HANSON (MSU

RESEARCH INSTITUTION

KANSAS STATE UNIV., SCHOOL OF AGRICULTURE / ANDERSON HALL

MANHATTAN, KS 66502
COOPERATOR
KANSAS STATE GOVERNMENT
PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR, OFFICE OF WATER RESEARCH & TECH.
PRIMARY FUNDING AMOUNT
24,168
TIME FRAME
OCT. 1976 TO SEPT. 1977
LOCATION
KS SD MT
ABSTRACT

OBJECTIVE: EVALUATE FALL AND EARLY SPRING IRRIGATIONS AS RELATED TO: 1. REDUCING THE PEAK SUMMER LOAD REQUIREMENTS OF WATER AND ENERGY, 2. WATER USE EFFICIENCY AND CROP PRODUCTION, 3. SOIL TEMPERATURE AND SUBSEQUENT EFFECTS UPON CROP PRODUCTION, AND 4. IRRIGATION SYSTEM-SIZE AND ENERGY REQUIREMENTS.

APPROACH: IRRIGATION TIMING FIELD RESEARCH PLOTS WILL BE LOCATED NEAR TRIBUNE, KANSAS (CORN AND WINTER WHEAT); REDFIELD, SOUTH DAKOTA (ALFALFA, CORN, AND SPRING WHEAT); AND BOZEMAN, MONTANA (ALFALFA AND SPRING WHEAT). COMBINATIONS OF FALL, SPRING, AND IN-SEASON IRRIGATIONS WILL BE EMPLOYED. WATER APPLIED WILL BE 50% OF THE AVAILABLE WATER CAPACITY FOR A SOIL NOT TO EXCEED THE FIELD CAPACITY. PROFILE SOIL WATER CONTENTS WILL BE TAKEN IMMEDIATELY BEFORE AND AFTER EACH IRRIGATION AS WELL AS MONTHLY DURING THE 'OFF-SEASON'. SOIL TEMPERATURE AT THE 5 AND 20CM SOIL DEPTHS WILL BE MEASURED. GRAIN YIELD AND DRY MATTER PRODUCTION WILL BE DETERMINED AND USED IN CALCULATING WATER USE EFFICIENCY AND AGRONOMIC PERFORMANCE OF THE IRRIGATION SCHEDULES. DAILY MAX-MIN AIR TEMPERATURE, PRECIPITATION, DAILY INCOMING SOLAR RADIATION, DAILY WIND RUN, RELATIVE HUMIDITY, AND EVAPORATION FROM A STANDARD PAN WILL BE MEASURED. MODELING TECHNIQUES WILL BE APPLIED TO THE FIELD DATA TO EVALUATE THE BENEFITS AND COSTS OF EXTENDED SEASON IRRIGATION.

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00000876
PROJECT TITLE
THE FUTURE PRICES OF ELECTRICITY IN MONTANA
INVESTIGATORS
DR. JOHN W. DUFFIELD
RESEARCH INSTITUTION
UNIV. OF MONTANA, DEPT. OF ECONOMICS / MISSOULA, MT 59801
COOPERATOR
MONTANA ENERGY ADVISORY COUNCIL
PRIMARY SPONSOR
MONTANA DEPT. OF ADMINISTRATION
PRIMARY FUNDING AMOUNT
2,695
TIME FRAME
NOV. 1976 TO JAN. 1977
STATUS
COMPLETED JAN. 1977
LOCATION
MT
ABSTRACT

THIS STUDY WAS DESIGNED TO PROVIDE A PROJECTION OF THE AVERAGE PRICES OF ELECTRICITY FOR THE WESTERN PART OF MONTANA. THE PURPOSE OF THE ANALYSIS IS TO PROVIDE DECISION-MAKERS IN GOVERNMENT AND INDUSTRY WITH A RELIABLE FORECAST OF FUTURE PRICES. THE STUDY IS ALSO CONCERNED WITH IDENTIFYING THE EFFECT ON RATES OF CHANGES IN SPECIFIC FACTORS, SUCH AS FUEL PRICES. IT IS ANTICIPATED THAT THE RESULTS WILL BE USED FOR LIFE-CYCLE COSTING IN DESIGN AND PLANNING OF FUTURE STATE BUILDING AND HEATING SYSTEMS. (MEAC)

REPORTS AND PUBLICATIONS
DR. JOHN W. DUFFIELD. THE FUTURE PRICES OF ELECTRICITY IN MONTANA

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00000877
PROJECT TITLE
PROJECTION OF SUMMER PEAK DEMANDS
INVESTIGATORS
DON J. NELSON / DENNIS JOEL SYLVESTER
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, DEPT. OF ELECTRICAL ENG. / LINCOLN, NE 68508
PRIMARY SPONSOR
NEBRASKA PUBLIC POWER DISTRICT
TIME FRAME
1976 TO CONTINUING
LOCATION
NE
ABSTRACT

INVESTIGATION OF FACTORS AFFECTING PEAK SUMMER DEMAND AND DEVELOPMENT OF A TECHNIQUE TO PROJECT FUTURE SUMMER PEAKS

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00000878
PROJECT TITLE
FARMSTEAD ELECTRIC POWER USE AND SAFETY
PROJECT NUMBER
0032330 / SD00483
INVESTIGATORS
M. A. HELLICKSON / H. G. YOUNG
RESEARCH INSTITUTION
SOUTH DAKOTA STATE UNIV., AG. EXP. STATION / BROOKINGS, SD 57006

PRIMARY SPONSOR
SOUTH DAKOTA STATE GOVERNMENT
TIME FRAME
OCT. 1976 TO SEPT. 1977
ABSTRACT

OBJECTIVE: STUDY THE TIME AND AMOUNT OF ELECTRICAL ENERGY USED WITHIN BUILDINGS AND WITHIN FARMSTEADS. DEVELOP DESIGN CRITERIA FOR WIRES, ENTRANCE SWITCHES, AND OVERCURRENT DEVICES BASED ON ACTUAL LOAD RATHER THAN MAXIMUM DEMAND, OR CONNECTED LOAD. EVALUATE THE POTENTIAL OF EXPANDING EXISTING ELECTRICAL SYSTEMS IF MECHANIZATION IS INITIATED. EVALUATE THE HANDLING OF POWER FAILURES IN ENVIRONMENTAL CONTROL SYSTEMS; ALTERNATIVES WILL BE CONSIDERED, SUCH AS STAND-BY GENERATORS AND AUTOMATICALLY CONTROLLED DOORS.

APPROACH: ACTUAL LIVESTOCK PRODUCERS WILL BE USED AS COOPERATORS. INSTALLATION OF EQUIPMENT AND INSTRUMENTATION WILL BE INSTALLED IN ORDER TO SECURE THE MOST RELIABLE INFORMATION AND DATA POSSIBLE. ATTEMPTS WILL BE MADE TO SECURE LIVESTOCK COOLING INFORMATION, AS WELL AS HEATING. THE DATA SECURED WILL BE COMPARED AND CORRELATED WITH RELIABLE EXISTING LIVESTOCK REQUIREMENTS SUCH AS IN THE CASE OF A POWER OUTAGE. LABORATORY STUDIES WILL BE CONDUCTED UNDER CONTROLLED CONDITIONS TO SIMULATE SEASONAL CONDITIONS. THIS WILL SECURE INITIAL INFORMATION TO FURTHER TEST UNDER FIELD CONDITIONS. SOME INSTALLATIONS WILL BE MADE ON UNIVERSITY OWNED FARMS, SUCH AS THE DAIRY UNIT.

00000879

PROJECT TITLE
FEDERAL LAND POLICY AFFECTING DOMESTIC MINERAL ACCESSIBILITY ON NON-FEDERAL LANDS

INVESTIGATORS
DR. FRANK J. WOBBER / DR. ALBERT PALADINO

RESEARCH INSTITUTION
U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT /
119 D ST. NE / WASHINGTON, D.C. 20510

PRIMARY SPONSOR
U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT

PRIMARY FUNDING AMOUNT
200,000

TIME FRAME
NOV. 15, 1976 TO OCT. 15, 1976

LOCATION
CO NM AZ WY SD ND AK

ABSTRACT
THIS PROJECT IS AN EXTENSION OF MINERALS ACCESSIBILITY CONDUCTED BY THE OFFICE OF TECHNOLOGY ASSESSMENT WHICH COVERED FEDERAL LANDS. IT ADDRESSES THE POTENTIAL EFFECTS OF CONTINUING, MODIFYING AND RESTRUCTURING FEDERAL LAND LAWS POLICIES AND PRACTICES THAT SIGNIFICANTLY AFFECT THE ACCESSIBILITY OF MINERALS ON ONSHORE NON-FEDERAL LANDS WITH SPECIFIC ATTENTION TO 1) SEVERED SURFACE AND MINERAL ESTATES AND 2) AVAILABILITY OF MINERAL TRANSPORTATION CORRIDORS. PROBLEMS AND ISSUES ASSOCIATED WITH SEVERED ESTATES AND MINERAL TRANSPORTATION CORRIDORS ARE BEING IDENTIFIED AND EVALUATED. PRINCIPAL IMPACTS OF FEDERAL LAWS, POLICIES AND PRACTICES ON NON-FEDERAL MINERAL DEVELOPMENT INCLUDING STATE, LOCAL AND PRIVATE RESPONSES AND ADJUSTMENTS WILL BE IDENTIFIED. LEGISLATIVE OPTIONS AVAILABLE TO CONGRESS FOR AFFECTING POSITIVE CHANGES TO CURRENT FEDERAL LAND LAWS, REGULATIONS OR PRACTICES AS IMPACT NON FEDERAL LANDS WILL BE IDENTIFIED AND ANALYZED. LEGAL, SOCIAL, ENVIRONMENTAL, ECONOMIC AND OTHER IMPACTS OF THESE LEGISLATIVE OPTIONS WILL BE ASSESSED. SEVERAL REGIONAL OR STATE CASE STUDIES IN THE WESTERN STATES, PROBABLY COLORADO, NEW MEXICO, ARIZONA, WYOMING AND/OR THE DAKOTAS ARE EXPECTED. A SECOND GOAL WILL BE TO ASSESS MINERALS CORRIDORS PROBLEMS AND ISSUES IN ALASKA, PARTICULARLY PROPOSED FEDERAL CONSERVATION, ALASKA NATIVE CLAIMS SETTLEMENT ACT, 0-2, SELECTIONS AS TEST CASES. ASSESSMENT IN FORMATIVE STAGES: WRITTEN INPUTS WESTERN STATE LAND MANAGERS, POLICYMAKERS AND PRIVATE SECTOR WILL BE SOLICITED.

REPORTS AND PUBLICATIONS
REPORTS IN PREPARATION. INTERIM REPORTS ON MINERAL ACCESSIBILITY MAY BE REQUESTED BUT HAVE LIMITED DISTRIBUTION. AVAILABLE FROM OFFICE OF TECHNOLOGY ASSESSMENT (MATERIALS PROGRAM) WASHINGTON, D.C. REQUESTS HONORED ON OR ABOUT SEPT. 1977.

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00000880

PROJECT TITLE
MONTANA ENERGY POLICY STUDY

INVESTIGATORS
BILL CHRISTIANSEN / JAMES H. NYBO

RESEARCH INSTITUTION
MONTANA ENERGY ADVISORY COUNCIL

PRIMARY SPONSOR
MONTANA ENERGY ADVISORY COUNCIL

PRIMARY FUNDING AMOUNT
58,000

TIME FRAME
AUG. 1975 TO JAN. 1977

LOCATION
MT

ABSTRACT
HOUSE BILL 453 DIRECTED THE GOVERNOR OF MONTANA TO PREPARE AND SUBMIT 'DIRECTLY TO THE LEGISLATURE A LONG-TERM, COMPREHENSIVE STATE ENERGY CONVERSION POLICY AND PLAN INCLUDING BUT NOT LIMITED TO ALTERNATIVE LONG-TERM GROWTH GOALS, A STATEWIDE SITING INVENTORY AND A PROPOSED SITING POLICY FOR THE COORDINATED SITING OF ENERGY CONVERSION FACILITIES TO MEET MONTANA'S ENERGY NEEDS.' GOVERNOR JUDGE ASSIGNED THESE TASKS TO THE MONTANA ENERGY ADVISORY COUNCIL AND AN ENERGY POLICY STUDY WAS INITIATED BY THE STAFF OF MEAC. (THE ENERGY POLICY STUDY INVOLVED A NUMBER OF BACKGROUND STUDIES. THESE PROJECTS ARE LISTED ON SEPARATE RESEARCH REPORTING FORMS.)

REPORTS AND PUBLICATIONS
APPROXIMATELY 20 BACKGROUND PAPERS HAVE BEEN PREPARED IN CONNECTION WITH THE POLICY STUDY. THESE INCLUDE:
MONTANA ENERGY POSITION PAPER. JUNE 1976.
A PROPOSED MONTANA ENERGY POLICY. MEAC STAFF PAPER 76-5. DECEMBER 1976.
A NEED FOR BALANCE: A MONTANA ENERGY POLICY SUMMARY VOLUME. JANUARY 1977.

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00000881

PROJECT TITLE
ENERGY EXTRACTION STUDY

INVESTIGATORS
SHARON SOLOMON

RESEARCH INSTITUTION
MONTANA ENERGY ADVISORY COUNCIL / HELENA, MT 59601
PRIMARY SPONSOR
MONTANA ENERGY ADVISORY COUNCIL
PRIMARY FUNDING AMOUNT
4,000
TIME FRAME
AUG. 1975 TO FEB. 1977
LOCATION
MT
ABSTRACT
ENERGY IS FOUND IN MANY DIFFERENT FORMS IN MONTANA, INCLUDING OIL, NATURAL GAS, COAL, URANIUM, HYDRO, GEOTHERMAL, SOLAR AND A VARIETY OF OTHERS. ARTICLE IX, SECTIONS 1 AND 2 OF THE MONTANA CONSTITUTION PROVIDES THE BASIS FOR THE CURRENT POLICY EXISTING IN MONTANA REGARDING EXTRACTION OF THESE NATURAL RESOURCES. LAWS SUCH AS THE MONTANA STRIP AND UNDERGROUND MINE RECLAMATION ACT ARE GOOD EXAMPLES OF ITS IMPLEMENTATION. HOWEVER, MUCH OF THE POLICY ON ENERGY EXTRACTION IS FRAGMENTED. THERE EXISTS A NEED IN MONTANA FOR A CONSISTENT AND COHESIVE ENERGY EXTRACTION POLICY WITH AN EYE TOWARD BOTH SHORT- AND LONG-TERM BENEFITS AND USES. IN DEVELOPING THIS POLICY, CAREFUL ATTENTION MUST BE PAID NOT ONLY TO SUPPLY AND DEMAND QUESTIONS BUT ALSO TO LAND USE AND SOCIAL GOALS AND END-USE CONSERVATION. THE PURPOSE OF THIS STUDY IS TO DEVELOP THE ABOVE EXTRACTION POLICY AND MAKE IT CONSISTENT WITH THE OVERALL ENERGY POLICY IN MONTANA. (MEAC)
STUDY AFFILIATION
PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL. 1977.

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00000882
PROJECT TITLE
A STUDY OF THE NEED FOR A GOVERNOR'S ENERGY AND RESOURCE OFFICE FOR THE STATE OF MONTANA
INVESTIGATORS
JIM NYBO / SHARON SOLOMON / TERRY WHEELING
RESEARCH INSTITUTION
MONTANA ENERGY ADVISORY COUNCIL / HELENA, MT 59601
PRIMARY SPONSOR
MONTANA ENERGY ADVISORY COUNCIL
PRIMARY FUNDING AMOUNT
1,500 (THIS SUM IS INCLUDED IN THE OVERALL FIGURE GIVEN FOR THE MONTANA ENERGY POLICY STUDY.)
TIME FRAME
OCT. 1976 TO NOV. 1976
STATUS
COMPLETED NOV. 1976
LOCATION
MT
ABSTRACT
WHEN THE ENERGY POLICY ASSIGNMENT (HOUSE BILL 453) WAS GIVEN TO THE MONTANA ENERGY ADVISORY COUNCIL (MEAC), GOVERNOR JUDGE DIRECTED "THE ENERGY POLICY AND PLAN TO BE FORMULATED IN SUCH A FASHION THAT IT WILL SERVE AS A BASIS FOR THE CONTINUING DEVELOPMENT AND IMPLEMENTATION OF SUBSTANTIVE ENERGY AND GROWTH POLICIES FOR THE STATE OF MONTANA...." IN RESPONSE TO THIS DIRECTIVE, THE STAFF OF MEAC INITIATED A STUDY OF HOW BEST TO ACCOMPLISH THIS GOAL. THE COMPONENTS OF THE STUDY INCLUDED AN EXAMINATION OF THE NEED FOR AN EXECUTIVE ENERGY AND RESOURCE POLICY OFFICE, A SUGGESTED DESIGN FOR SUCH AN OFFICE, AND HOW SUCH AN OFFICE MIGHT BE IMPLEMENTED IN THE STATE OF MONTANA. (MEAC)
STUDY AFFILIATION
PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL. 1977.
REPORTS AND PUBLICATIONS
PROPOSED ENERGY AND RESOURCE POLICY OFFICE. NOVEMBER 1976.

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00000883
PROJECT TITLE
MONTANA ENERGY RESOURCE MAP
INVESTIGATORS
ROBERT L. TAYLOR
RESEARCH INSTITUTION
MONTANA STATE UNIV., DEPT. OF GEOGRAPHY / BOZEMAN, MT 59715
PRIMARY SPONSOR
MONTANA ENERGY ADVISORY COUNCIL
PRIMARY FUNDING AMOUNT
2,100 (THIS SUM IS INCLUDED IN THE OVERALL FIGURE GIVEN FOR THE MONTANA ENERGY POLICY STUDY.)
TIME FRAME
SEPT. 1976 TO FEB. 1977
LOCATION
MT
ABSTRACT
THIS MAP, ON A SCALE OF 1:1,000,000 WILL DEPICT MAJOR KNOWN ENERGY RESERVES, CONVERSION FACILITIES, AND TRANSPORTATION SYSTEMS IN A MULTI-COLOR FORMAT. (MEAC)
STUDY AFFILIATION
PART OF 'MONTANA ENERGY POLICY STUDY,' MONTANA ENERGY ADVISORY COUNCIL. 1977.

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00000884
PROJECT TITLE
HIGHWAY NEEDS RELATED TO HAULING ENERGY RESOURCES
INVESTIGATORS
PAUL R. DEVINE

RESEARCH INSTITUTION
MONTANA DEPT. OF HIGHWAYS / HELENA, MT 59601
PRIMARY SPONSOR
U.S. DEPT. OF TRANSPORTATION, FEDERAL HIGHWAY ADMIN.
SECONDARY SPONSOR(S)
MONTANA DEPT. OF HIGHWAYS
PRIMARY FUNDING AMOUNT
800
SECONDARY FUNDING AMOUNT(S)
200
TIME FRAME
DEC. 1, 1976 TO DEC. 31, 1976
LOCATION
MT
ABSTRACT

THIS STUDY IS AUTHORIZED BY SECTION 153 OF THE 1976 FEDERAL AID HIGHWAY ACT TO OBTAIN INFORMATION CONCERNING THE POSSIBLE NEED FOR CONSTRUCTION OR RECONSTRUCTION OF HIGHWAYS THAT MAY BE REQUIRED TO TRANSPORT ENERGY RESOURCES. THESE RESOURCES ARE DEFINED AS COAL, PETROLEUM PRODUCTS, OIL, OILSHALE, NATURAL GAS AND URANIUM. REPORT ON NUMBER OF MILES OF ROADS REQUIRING IMPROVEMENT AND ESTIMATED COSTS IS TO BE SUBMITTED TO THE FEDERAL HIGHWAY ADMINISTRATION DIVISION OFFICE BY DECEMBER 30, 1976. (MEAC)

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00000885
PROJECT TITLE
ENERGY DATA BASE
INVESTIGATORS
R. THOMAS DUNDAS
RESEARCH INSTITUTION
MONTANA DEPT. OF COMMUNITY AFFAIRS, RESEARCH & INFO. SYSTEMS
HELENA, MT 59601
PRIMARY SPONSOR
MONTANA DEPT. OF COMMUNITY AFFAIRS
PRIMARY FUNDING AMOUNT
1,000
TIME FRAME
JULY, 1976 TO MAR. 1977
LOCATION
MT
ABSTRACT

THIS PROJECT CONSISTED OF THE AUTOMATION OF ENERGY MATED WERE AS FOLLOWS: 1. GAS AND OIL PRODUCTION DATA AT THE FIELD LEVEL FROM THE DEPT. OF NATURAL RESOURCES AND CONSERVATION. 2. REFINING DATA FROM MONTANA REFINERIES FROM DNR. 3. OIL, GAS AND COAL PRODUCTION INFORMATION BY YEAR FROM MONTANA DEPT. OF REVENUE. 4. COAL PRODUCTION INFORMATION, BY FIRM, BY YEAR, FROM THE SAFETY AND HEALTH BUREAU, MONTANA DEPT. OF LABOR AND INDUSTRY. (MEAC)

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00000886
PROJECT TITLE
MINERAL OWNERSHIP FILE
INVESTIGATORS
R. THOMAS DUNDAS
RESEARCH INSTITUTION
MONTANA DEPT. OF COMMUNITY AFFAIRS, RESEARCH & INFO. SYSTEMS
HELENA, MT 59601
PRIMARY SPONSOR
MONTANA DEPT. OF STATE LANDS
MONTANA DEPT. OF COMMUNITY AFFAIRS
PRIMARY FUNDING AMOUNT
2,000
TIME FRAME
APR. 1976 TO CONTINUING
ABSTRACT

THIS FILE IS COMPOSED OF TWO PARTS: STATE SUBSURFACE MINERAL OWNERSHIP AND FEDERAL SUBSURFACE MINERAL OWNERSHIP. THE STATE FILE CONSISTS OF THE AUTOMATION OF MINERAL OWNERSHIP FROM THE STATE DEPT. OF LANDS FOR APPROXIMATELY TWENTY COUNTIES. THIS FILE MAY BE EXPANDED IN THE FUTURE TO INCLUDE ALL AREAS OF THE STATE. THE FEDERAL MINERAL OWNERSHIP WAS CODED FROM BLM MINERAL MAPS AND PRESENTLY INCLUDES POSITIONS OF FOUR COUNTIES IN SOUTHEAST MONTANA. (MEAC)

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00000887
PROJECT TITLE
STATE GOVERNMENTS' USE OF FUNDS ALLOCATED FROM MINERAL LEASING ACT RECEIPTS
INVESTIGATORS
MAXINE C. JOHNSON / MAUREEN F. ULLRICH
RESEARCH INSTITUTION
UNIV. OF MONTANA, BUREAU OF BUSINESS & ECONOMIC RESEARCH
MISSOULA, MT 59801
PRIMARY SPONSOR
U.S. DEPT. OF INTERIOR, OFFICE OF MINERALS POLICY DEVELOPMENT
18TH AND E STREET NW / WASHINGTON, D.C. 20240
PRIMARY FUNDING AMOUNT
5,250
TIME FRAME
JUNE 1976 TO SEPT. 1976
STATUS
COMPLETED SEPT. 1976
LOCATION
MT CA CO NM UT WY

ABSTRACT

THE MINERAL LEASING ACT OF 1920 AND THE ACQUIRED MINERAL LEASING ACT OF 1947 PROVIDE THAT 37.5 PERCENT OF RECEIPTS FROM FEDERAL LEASES OF MINERAL LAND SHOULD GO TO THE STATES IN WHICH THE LANDS ARE LOCATED. THESE MONEYS ARE TO BE USED BY THE STATE OF SUB-DIVISIONS THEREOF, FOR THE CONSTRUCTION AND MAINTENANCE OF PUBLIC ROADS OR FOR THE SUPPORT OF PUBLIC SCHOOLS OR OTHER PUBLIC EDUCATIONAL INSTITUTIONS AS THE LEGISLATURE OF THE STATE MAY DIRECT.

PAYMENTS RECEIVED UNDER THESE ACTS IN 1974 AND 1973 BY THE STATES OF CALIFORNIA, COLORADO, MONTANA, NEW MEXICO, UTAH AND WYOMING ARE THE AREAS OF INTEREST TO BE INCLUDED IN THIS PROJECT TO STUDY AND INVESTIGATE HOW MINERAL LEASING ACTS FUNDS ARE USED BY THESE SIX STATES: 1. DEVELOP HOW THE FUNDS ARE DIVIDED BETWEEN PUBLIC ROADS AND EDUCATION. 2. THE PROPORTION OF THE FUNDS DISTRIBUTED TO LOCAL GOVERNMENTS AND BY WHAT CRITERIA. 3. RELATIONSHIP BETWEEN LOCATION OF MINERAL LANDS LEASED, COMMUNITY IMPACT, AND THE EXPENDITURE OF MINERAL LEASING ACT RECEIPTS. WRITTEN REPORT TO BE SUBMITTED BY SEPTEMBER 30, 1976 TO REFLECT IF FUNDS IN A STATE ARE DESIGNATED FOR CERTAIN COUNTIES, SCHOOL DISTRICTS OR PROJECTS, AND RELATE THE AMOUNTS TO THE LEASE FUNDS GENERATED IN THE AREAS CONCERNED. (MEAC)

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00000888

PROJECT TITLE
APPLICATION OF REMOTE SENSING DATA TO FUEL ALLOCATION
INVESTIGATORS
R. O. HOFFMAN
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, DEPT. OF INDUSTRIAL ENG. / LINCOLN, NE 68588
PRIMARY SPONSOR
U.S. NATIONAL AERONAUTICS & SPACE ADMIN.,
OFFICE OF UNIV. AFFAIRS
PRIMARY FUNDING AMOUNT
7,000
TIME FRAME
MAY 1975 TO APRIL 1976
LOCATION
NE
ABSTRACT

TO DEVELOP AND TEST FUEL ALLOCATION MODELS USING DATA GATHERED THROUGH REMOTE SENSING.

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00000889

PROJECT TITLE
NEBRASKA ENERGY RESOURCES INFORMATION SYSTEM: A PRELIMINARY STUDY
INVESTIGATORS
JOHN L. BALLARD
RESEARCH INSTITUTION
UNIV. OF NEBRASKA, DEPT. OF INDUSTRIAL ENG. / LINCOLN, NE
PRIMARY SPONSOR
NEBRASKA ENERGY OFFICE
PRIMARY FUNDING AMOUNT
4821
TIME FRAME
JULY 1975 TO JUNE 1976
LOCATION
NE
ABSTRACT

THIS REPORT SURVEYS THE INPUT DATA REQUIREMENTS OF SEVERAL EXISTING STATE ENERGY MODELS. ALSO, FEDERAL AGENCIES AND INDEPENDENT ORGANIZATIONS ARE IDENTIFIED AS POTENTIAL SOURCES OF ENERGY-RELATED DATA. IF THE STATE OF NEBRASKA CHOOSES TO DEVELOP A NEBRASKA ENERGY MODEL, THE REPORT RECOMMENDS THAT THE STATE DEVELOP A COMPREHENSIVE ENERGY DATA BASE TO SUPPORT THE DEVELOPMENT OF THE ENERGY MODEL. FURTHERMORE, AT SOME TIME IN THE FUTURE THE DATA BASE MAY EVOLVE INTO A MORE SOPHISTICATED INFORMATION SYSTEM.

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00000890

PROJECT TITLE
HABITAT CLASSIFICATIONS SYSTEMS
PROJECT NUMBER
WELUT NO. 004.1-76
RESEARCH INSTITUTION
ECOLOGY CONSULTANTS, INC. / 1716 HEATH PKWY / FT. COLLINS, CO 80521
PRIMARY SPONSOR
U.S. FISH & WILDLIFE SERV., WELUT / HARRY COULOMBE / RM. 206 FEDERAL BLDG. / FT. COLLINS, CO 80521
PRIMARY FUNDING AMOUNT
15,665
TIME FRAME
SEPT. 1976 TO NOV. 1976
LOCATION
WESTERN STATES
ABSTRACT

THE STUDY WILL COMPILE A LIST AND ASSOCIATED DESCRIPTIONS

OF ALL LAND USE AND VEGETATION CLASSIFICATION SYSTEMS IN USE BY FEDERAL AND STATE LAND AND RESOURCE MANAGEMENT AND PLANNING AGENCIES IN THE WESTERN UNITED STATES AND EVALUATE EACH SYSTEM.
THE PROJECT WILL ENCOMPASS THE STATES OF ND, SD, NE, KS, TX, NM, CO, WY, MT, ID, UT, NV, AZ, CA, OR, WA AND AK. IT WILL INCLUDE ALL STATE AGENCIES, AND STATE AND REGIONAL OFFICES OF FEDERAL AGENCIES INVOLVED IN RENEWABLE RESOURCES MANAGEMENT, PLANNING, AND RESEARCH. ALTHOUGH MUCH OF THE SURVEY WORK CAN BE CONDUCTED BY TELEPHONE, PERSONAL VISITS WILL ALSO BE PERFORMED WHENEVER NECESSARY.
PRODUCTS: A FINAL REPORT WILL OUTLINE ALL CLASSIFICATION SYSTEMS FOUND AND EVALUATE EACH SYSTEM IN TERMS OF ITS PURPOSE, ITS CAPABILITY FOR MORE GENERAL APPLICATION, ADVANTAGES AND DISADVANTAGES, AND THE DEGREE TO WHICH IT MEETS THE PURPOSE OF ITS DEVELOPMENT.

*****

00000891

PROJECT TITLE
DECISION PROCESSES

PROJECT NUMBER
WELUT 029-76

INVESTIGATORS
FRANK GRAVES

RESEARCH INSTITUTION
INSTITUTE OF PUBLIC ADMINISTRATION / WASHINGTON, D.C.

PRIMARY SPONSOR
U.S. FISH & WILDLIFE SERV., WELUT / HARVEY DOERKSEN /
RM. 206, FEDERAL BLDG / FT. COLLINS, CO 80521

PRIMARY FUNDING AMOUNT
60,758

TIME FRAME
JUNE 1976 TO DEC. 1976

LOCATION
ND WY MT CO UT NM

ABSTRACT
THIS PROJECT WILL IDENTIFY STATE AND FEDERAL DECISION PROCESSES FOR LEASING, REGULATION AND DISTRIBUTION OF ENERGY DEVELOPMENT AND THE ALLOCATION OF WATER FOR ENERGY AND INFORMATIONAL NEEDS RELATED TO FISH AND WILDLIFE RESOURCES. EMPHASIS WILL BE PLACED ON IDENTIFYING MAJOR DECISION POINTS, TYPES AND SOURCES OF INFORMATION USED AT EACH DECISION POINT AND THOSE DECISION POINTS IN EACH PROCESS WHICH THE FISH AND WILDLIFE SERVICE COULD PROVIDE INFORMATION AND THE MOST APPROPRIATE FORMAT FOR SUCH INFORMATION.
PRODUCTS: 1. FINAL REPORT DOCUMENTING IDENTIFIED DECISION PROCESSES AND RELATED INFORMATION NEEDS.
2. FLOW CHARTS ILLUSTRATING EACH DECISION PROCESS.

LOCATION-STATE INDEX

The Location-State Index contains State names, utilizing the standard two-digit abbreviations listed below.

Other location names such as counties, river basins, and geographic formations can be found in the Subject Index.

Alabama	AL
Alaska	AK
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
District of Columbia	DC
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Maryland	MD
Massachusetts	MA
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Virgin Islands	VI
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

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          LOCATION-STATE INDEX
AK
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AZ
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CA
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CANADA
        00000765
CO
        00000749  00000759  00000778  00000779  00000790  00000805  00000806  00000825  00000830  00000831  00000837
        00000838  00000839  00000853  00000875  00000879  00000887  00000890
FL
        00000802  00000815  00000832  00000838
GX*
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HI
        00000852
IA
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ID
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IL
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IN
        00000826

KS
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KY
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MN
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MT
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ND
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        00000890  00000891
NE
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        00000858  00000859  00000862  00000869  00000874  00000877  00000888  00000889  00000890
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*GX SIGNIFIES PROJECTS OF GENERAL APPLICABILITY NOT GEOGRAPHICALLY BOUND TO A STATE

LOCATION-STATE INDEX

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NM
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NV
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OH
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OK
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OR
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PA
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SD
          00000736  00000737  00000738  00000739  00000741  00000759  00000760  00000774  00000775  00000790  00000798
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          00000890

TX
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UT
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          00000853  00000863  00000887  00000890  00000891

WA
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WI
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WV
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WY
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          00000879  00000887  00000890  00000891
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PERSONAL NAME INDEX

The Personal Name Index contains the names of the investigators, supervisors, project monitors and officers, and authors of publications for each project.

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ORGANIZATION INDEX

The Organization Index contains uniform names of all organizations included in the project descriptions. Government agencies listed in the Organization Index are prefaced by the organization's affiliation; for example, *South Dakota* Office of Energy Policy, and *U.S.* Bureau of Land Management, EMRIA.

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ALTERNATE ENERGY RESOURCES ORGANIZATION
00000796 00000856

AMAX COAL CO.
00000777

AMERICAN COLLOID CO.
00000867

AMERICAN NATURAL GAS CO.
00000723

ATLANTIC-RICHFIELD CO.
00000733 00000734

ATMOSPHERIC SERVICES ASSOCIATES
00000777

BASIN ELECTRIC POWER COOPERATIVE
00000801

BAUKEL-NOONAN MINING CO.
00000728

BILLINGS-YELLOWSTONE CITY COUNTY PLANNING BOARD
00000871

BONNEVILLE POWER ADMIN.
00000769

BURNS & MCDONNELL
00000801

CHEMICAL CONSTRUCTION CORP.
00000797

CHEMICO AIR POLLUTION CONTROL CO.
00000797

COLORADO STATE UNIV., DEPT. OF AG. ENGINEERING
00000839

COLORADO STATE UNIV., DEPT. OF AGRONOMY
00000866

CONFEDERATED SALISH & KOOTENAI TRIBES
00000769

DECKER COAL CO.
00000727 00000764

DENVER RESEARCH INSTITUTE
00000789

DEWSNUP & JENSEN
00000759

DREYER BROTHERS, INC.
00000768

ECOLOGY CONSULTANTS, INC.
00000890

ELECTRIC POWER RESEARCH INSTITUTE
00000791

ENVIRO CONTROL, INC.
00000759

ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
00000779

ENVIROTECH, INC.
00000801

FARMLAND INDUSTRIES, INC.
00000798

ORGANIZATION INDEX

GENERAL ELECTRIC - TEMPO
00000751

GREAT FALLS CITY COUNTY PLANNING BOARD
00000872

HARP, LTD
00000825

HEARTLAND CONSUMERS POWER DISTRICT
00000801

HELENA CITY ENGINEER'S OFFICE
00000870

HITTMAN ASSOCIATES, INC.
00000753

HONEYWELL ENERGY SYSTEMS CENTER
00000847

ILLINOIS STATE WATER SURVEY
00000753

INSTITUTE OF PUBLIC ADMINISTRATION
00000891

INTAKE WATER CO.
00000767

INTERSTATE CONFERENCE ON WATER PROBLEMS
00000743

IOWA PUBLIC SERVICE CO.
00000799

KANSAS STATE GOVERNMENT
00000875

KANSAS STATE UNIV., SCHOOL OF AGRICULTURE
00000875

LINCOLN ELECTRIC SYSTEM
00000801 00000843

MISSOURI BASIN MUNICIPAL POWER AGENCY
00000801

MISSOURI RIVER BASIN COMMISSION
00000743

MONTANA BOARD OF NATURAL RESOURCES & CONSERVATION
00000860

MONTANA BUREAU OF MINES & GEOLOGY
00000722 00000755 00000756 00000757 00000823

MONTANA CITIZEN'S ADVISORY COMMITTEE ON ENERGY
00000796 00000873

MONTANA DEPT. OF ADMINISTRATION
00000827 00000876

MONTANA DEPT. OF COMMUNITY AFFAIRS
00000796 00000885 00000886

MONTANA DEPT. OF COMMUNITY AFFAIRS, RESEARCH & INFO. SYSTEMS
00000885 00000886

MONTANA DEPT. OF FISH AND GAME
00000745 00000766 00000767 00000865

MONTANA DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES
00000763

MONTANA DEPT. OF HIGHWAYS
00000870 00000871 00000872 00000884

ORGANIZATION INDEX

MONTANA DEPT. OF LABOR & INDUSTRY
00000885
MONTANA DEPT. OF NATURAL RESOURCES & CONSERVATION
00000743 00000744 00000754 00000766 00000768 00000796 00000828 00000861 00000885
MONTANA DEPT. OF REVENUE
00000885
MONTANA DEPT. OF STATE LANDS
00000764 00000766 00000823 00000886
MONTANA ENERGY & MHD RESEARCH & DEVELOPMENT INST.
00000793 00000795 00000868
MONTANA ENERGY ADVISORY COUNCIL
00000717 00000793 00000795 00000796 00000827 00000856 00000868 00000873 00000876 00000880 00000881
00000882 00000883
MONTANA ENVIRONMENTAL QUALITY COUNCIL
00000873
MONTANA OFFICE OF BUDGET & PROGRAM PLANNING
00000827
MONTANA OFFICE OF THE GOVERNOR
00000873
MONTANA POWER CO.
00000769
MONTANA STATE GOVERNMENT
00000755 00000763
MONTANA STATE UNIV.
00000875

MONTANA STATE UNIV., AG. EXP. STATION
00000727 00000860
MONTANA STATE UNIV., COOP. FISHERY RESEARCH UNIT
00000766
MONTANA STATE UNIV., DEPT. OF AG. ECONOMICS & ECONOMICS
00000827
MONTANA STATE UNIV., DEPT. OF BIOLOGY
00000766
MONTANA STATE UNIV., DEPT. OF CHEMISTRY
00000860
MONTANA STATE UNIV., DEPT. OF CIVIL ENG.
00000728 00000741
MONTANA STATE UNIV., DEPT. OF GEOGRAPHY
00000883
MONTANA STATE UNIV., DEPT. OF PHYSICS
00000792
MONTANA STATE UNIV., MHD ENERGY RESEARCH
00000794
MONTANA TASK FORCE ON COAL GASIFICATION
00000880
MONTANA WATER QUALITY BUREAU
00000742
MOUNT RUSHMORE NATIONAL MEMORIAL
00000847
MOUNTAIN WEST RESEARCH. INC.
00000796

NATIONAL SCIENCE FOUNDATION
00000840 00000841
NATIONAL SCIENCE FOUNDATION, DIV. OF ENGINEERING
00000748
NATIONAL SCIENCE FOUNDATION, DIV. OF ENVIRONMENTAL SCIENCES
00000721
NEBRASKA AG. PRODUCTS INDUSTRIAL UTILIZATION COMMITTEE
00000844
NEBRASKA ENERGY OFFICE
00000857 00000889
NEBRASKA PUBLIC POWER DISTRICT
00000877
NORTH DAKOTA GEOLOGICAL SURVEY
00000829
NORTH DAKOTA STATE DEPT. OF HEALTH. DIV. OF ENV. ENG.
00000770 00000771
NORTH DAKOTA STATE UNIV.
00000772
NORTH DAKOTA STATE UNIV., AG. EXP. STATION
00000726
NORTH DAKOTA STATE UNIV., DEPT. OF AGRICULTURAL ENGINEERING
00000787
NORTH DAKOTA STATE UNIV., DEPT. OF BOTANY
00000726
NORTH DAKOTA STATE UNIV., DEPT. OF CIVIL ENGINEERING
00000748

NORTH DAKOTA STATE UNIV., DEPT. OF NATURAL RESOURCES
00000760
NORTH DAKOTA STATE UNIV., WATER RESOURCES RESEARCH INST.
00000773
OLD WEST REGIONAL COMMISSION
00000719 00000720 00000761 00000783
PACIFIC NORTHWEST RIVER BASINS COMMISSION
00000743
PACIFIC POWER & LIGHT CO.
00000784 00000797
PENNSYLVANIA STATE UNIV., DEPT. OF MINERAL ENG.
00000800
PUGET SOUND POWER AND LIGHT
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R. W. BECK & ASSOCIATES
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00000769
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SOUTH DAKOTA SCHOOL OF MINES & TECH.
00000846 00000847 00000848 00000849
SOUTH DAKOTA SCHOOL OF MINES & TECH. ENG & MINING EXP. STATION
00000798
SOUTH DAKOTA SCHOOL OF MINES & TECH., INST. OF ATMOS. SCI.
00000774

SOUTH DAKOTA STATE GOVERNMENT
00000878

SOUTH DAKOTA STATE UNIV.
00000864 00000875

SOUTH DAKOTA STATE UNIV., AG. EXP. STATION
00000878

SPITZNAGEL PARTNERS, INC.
00000847

STEARNS-ROGER, INC.
00000785

SWEETWATER COUNTY PLANNING DEPT.
00000781

SWEETWATER COUNTY PRIORITY BOARD
00000781

THK ASSOCIATES, INC.
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